Fire Detection Product Catalogue

tyco | Safety Products

Issue 3

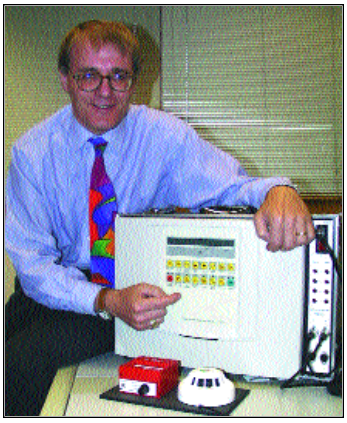
Introduction

Welcome to the Third Edition of Tyco Safety Product's Fire Product Catalogue of product available from our Letchworth UK Distribution Centre. We aim to make your product range as comprehensive as possible to ensure you never need go anywhere else. To meet this goal, our product specialists, with your help, have selected the most appropriate, cost effective product range all available for next day delivery.

In line with our ISO 9000 accreditation, only those products that meet the highest quality criteria have been included.

Our warehouse is one of the largest Fire & Security product distribution centres in Europe. Our goal is to despatch product on the same day as we receive your order. Our warranty and service returns policy is second to none. We recognise that your business is highly dependant on excellence in customer service and to help achieve this we offer extended warranty from many of our suppliers. Full credit is also available on a "No Question – No Fuss" basis for any new in-warranty product returned to the distribution centre.

Our training department offers comprehensive sales, design and engineering training on our complete range of products. We recommend you take advantage of this free of charge service. As always, training can be undertaken any time, anywhere to suit your business needs. Contact our telephone Help Line for further information.



Tyco Safety Product's Web site contains an endless supply of product related information. It is regularly updated and features many aids to the selling process including presentation material, independent product test results and detailed technical information.

Our web site can be found at **www.tycosafetyproducts-europe.com**

To enhance customer specifications and quotations we also provide a series of product datasheets which can give our clients an opportunity to read more about the product. We are positive that together we can help grow your business and we look forward to working with you in the future.

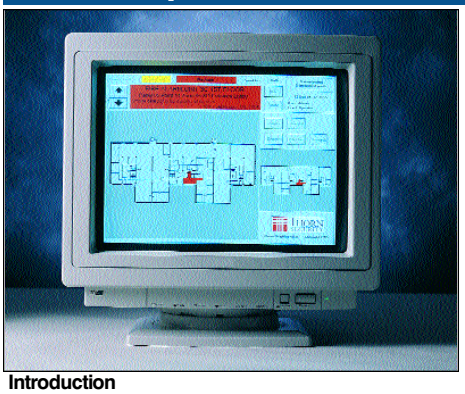
For further details on this catalogue, contact our customer telephone Help Line on **+44 1932 74 3327.**

Table of Contents

3 Addressable Fire Systems - LPCB Approved
15 Addressable Fire Systems - UL/FM Approved
23 Conventional Fire Alarm Panels - BS5839 & EN54
36 Conventional Marine Panels
39 Batteries, PSU & Door Release Units
41 Addressable 900 Series Detectors
44 Conventional 600 Series Detectors
48 Standard Detector Bases
49 Functional Detector Bases
53 M600/900 Detector Ancillaries
54 Duct Probe Air Sampling
55 Aspirating Smoke Detectors VESDA - Visions Systems
59 Special Hazard Detectors
62 Intrinsically Safe Point Detectors
67 Intrinsically Safe Barriers & Housings
69 Beam & Linear Heat Detectors
72 Detector Test Equipment
74 CP Series Callpoints
80 Fulleon Range of Sounders
84 MINERVA Range of Sounders
87 MINERVA Firecryer - Voice Enhanced Sounders
88 Visual Indicators
90 Auxiliary Interface Relays/Miscellaneous Fire Equipment
92 Water Leak Detection Alarms
93 Wire Free Product Range
98 Approvals Listing of Company Equipment

Addressable Fire Systems - LPCB Approved

ThornGraph



Introduction

ThornGraph is a combined text and graphics system which provides a window through which the status of all MINERVA fire controllers connected to ThornNet can be monitored and controlled.

ThornGraph has been designed with clear displays and simple controls which can be quickly and easily understood by an operator rather than an engineer. The system is designed to be used with a touch screen or mouse and does not require the use of a Qwerty keyboard. P.C. based ThornGraph uses the latest in operating system software. Windows NT ™ is a multi-tasking operating system providing a truly reliable platform for a real time monitoring system using a P.C. Using the secure acknowledged transfer of events, up to three ThornGraph systems can be used to monitor up to 62 MINERVA controllers connected to ThornNet.

ThornGraph uses a unique configuration tool GRAB-IT, (Graphical, AutoCad, Bitmap, Information, Transfer) to automatically configure the system. Installation plans, device type and location, flood fill areas, flood fill locations, zoom areas and zoom magnifications are all imported from AutoCad. This configuration tool significantly reduces configuration time, increases the integrity of information and enables simple updates to the system in the future.

Features

- Combined text and graphics display on a single P.C.
- Connected to ThornNet, a single system can be used to monitor up to 62 MINERVA fire controller
- Designed for touch screen operation
- Simple operator controls, no Qwerty keypad
- High resolution colour SVGA display
- Windows NT ™ multi-tasking operating system
- Four level automatic zoom sequence available for each point
- Overview map maintains a view of wider areas whilst zooming into detail in the graphics window
- Procedure window provides additional text and operator instructions for each event
- Classification of events helps to maintain a record of activation and the causes
- Browse icons placed on maps can be used to pan across an installation in a logical sequence
- Control icons placed on maps can be used to initiate actions at the MINERVA fire controller, used to operate ancillaries such as HVAC.
- Automatic configuration using the GRAB-IT tool, including Cad drawings, text messages, locations, flood fills and zoom areas
- Full password protection and multiple operator levels
- Remote control of MINERVA fire controller across the network using VFP, Virtual Front Panel
- Real time on line event management and historic information system
- User designed search keys can be used to generate specific and useful reports

ThornGraph provides a graphical user interface to the ThornNet, network communications system. ThornNet will support up to a maximum of 3 ThornGraph user interfaces on the network. ThornGraph consists of a standard personal computer, that is linked onto the ThornNet via a TLK-530 network interface module. ThornGraph is primarily operated by either mouse or touch screen, with two monitor options available 17" or 22" touch screen.

For an up to date specification of the latest approved PC platform contact the Fire Product Manager.

Product Codes

508.020.007

Compatibility tested PC for ThornGraph graphics terminal preloaded and configured with default passwords

636.006.060

Thorn Graph 17" Standard Monitor

508.020.006

Thorngraph 22" touchscreen - Liyama touch pro 510 complete with 5 year warranty

508.020.101

Software package A for 1 network node

508.020.102

Software package B for 2-5 network nodes

508.020.103

Software package C for 6 or more network nodes

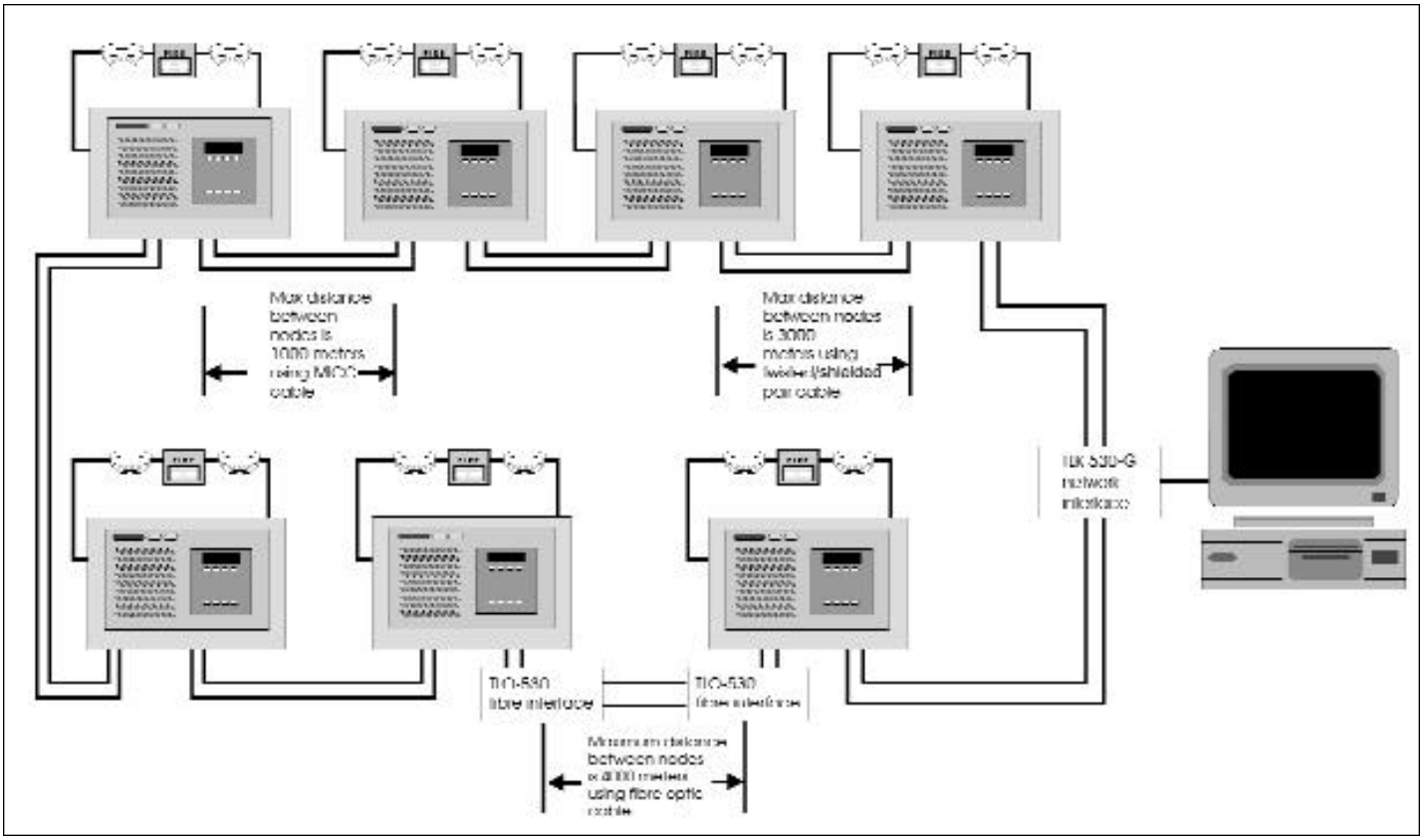
508.020.104

Software package D for additional graphics nodes on the same ThornNet

*Datasheet - Product Code **PSF80** "Thorngraph"*

Manual - Vol011B "Software Operating Manual"

ThornGraph T ypical Arrangement



ThornNet

ThornNet provides a true peer to peer communications interface for up to 62, MINERVA 8, MINERVA 16E or MINERVA 80 fire controllers in any combination and the ThornGraph, graphical user interface. The units can be inter-connected into a large network without the need for a host or master controller. ThornNet is based upon a combination of hardware and software that allows MINERVA fire controllers (Nodes) to be linked together. The ThornNet supports up to 61,380 analogue/addressable points, 4,960 zones and over 7,000 digital I/0 points. The network co-ordinates and distributes alarm annunciation and supervises system operation. When connected to the network, each MINERVA controller maintains its full stand-alone features, functions and capabilities.

Features

- LPCB approved
- A peer to peer network that does not use a host or master controller.
- 62 nodes, 61,380 points, 4,960 zone capacity.
- Virtual Front Panel (VFP) enables an operator to interrogate and control any MINERVA controller from the keypad/display of any other MINERVA controller.
- Bi-directional signalling.
- Open/short circuit isolation.
- Open/short circuit location.
- Events originating at any MINERVA controller can be used as an input to event/action processing of other panels to co-ordinate and distribute systems control.
- System can be configured in the field using Consys software.
- Failure of one node does not affect any other node or communications between nodes. In the event of multiple failures, nodes will automatically re-generate into independent fully functional networks.
- Automatic network re-configuration when a previously failed node is restored to the network.
- Up to 3,000 meters between nodes with twisted/shielded cable.
- System will operate on standard 2 core MICC.
- MINERVA controllers may be grouped into sub-nets where each panel is programmed to inter-act only with other selected controllers.
- Plug-in module (TLK-530) easily connects a MINERVA fire controller to the network.
- Data is re-generated at each MINERVA controller and is sent out over the ThornNet as new clean data. All degradation in received data due to noise on a line, line attenuation, or phase shifting is eliminated when the data is re-generated.
- The ThornNet uses a token-passing, non collision communication protocol for data transmission.
- "Network zones" and "sectors" allow the network controllers to be configured as a single "seamless" system.
- ThornGraph, a P.C. based graphical user interface, connects directly on to the network.
- ThornNet supports combinations of MICC, twisted/shielded pair cabling, fibre optic cabling, and dedicated telephone line.
- Multiple communication topologies bus or ring.

The MINERVA ThornNet communications network is a collection of network interface modules and peripheral equipment that together form a network.

Product Codes

557.180.219

ThornGraph PC to TLK-530-G connection cable

557.180.148.A

TLO/TLD housing for a combination of 2 x TLO530 or TLD530 Communication interfaces (ADT branded)

557.180.147

Spare TLK -530 firmware Version 2.36

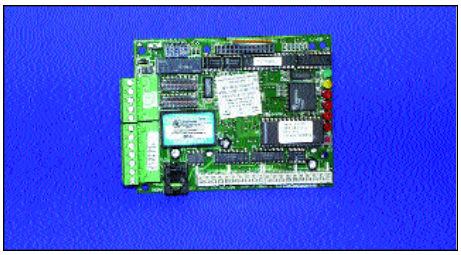
*Datasheet - Product Code **PSF81** "ThornNet"*

Manual - Vol07A-04-D1 "Communications Systems Manual"

TLK-530

The key hardware component that makes the network possible is the TLK-530 module. The TLK-530 provides the electrical/mechanical means to connect the components of the network to local and remote network signalling circuits. Installation of the TLK-530 is simplified with an edge connector that plugs onto the main processor board of the MINERVA controller. The TLK-530 provides RS-485 communications over a twisted shielded pair as a standard configuration. The distance between controllers can reach 3,000 meters at a speed of 38.4 Kbs using 18AWG twisted shielded cable.

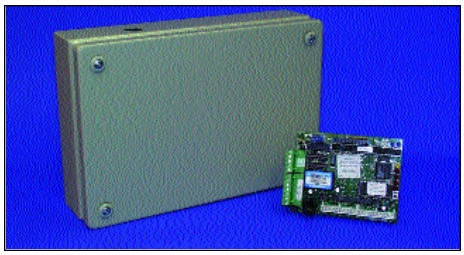
Fits within the MINERVA housing.



557.180.215

TLK530 ThornNet network node interface module

(Note: Functionally the same as TFX-TLI530)



557.180.218

TLK 530G ThornNet interface for ThornGraph PC c/w 240V PSU and housing

TLO-530

The Fibre Optics Module (TLO-530) is used to interface one fibre optic channel to the TLK-530 module. The TLO - 530 fibre optic interface module converts RS-485 digital data current pulses from the TLK-530 network interface module to light pulses. The light pulses are then carried over fibre optic cabling to another TLO-530 where the pulses are converted back to RS-485 digital data current pulses. Two TLK-530 modules are required per panel for redundant path star connections and when using fibre optics in both directions of ring and bus connections. Two (2) type 62.5/125 fibres between controllers (4 fibres when using redundant path star connections) allow the interface to transmit signals at 38.4 Kbs at distances as high as 4,000 meters between controllers.

Up to two units can be fitted into a TLO/TLD Housing which has a chassis plate to accommodate the units.

Technical Specification

Dimensions: 210H x 130W x 30D mm

Product Codes

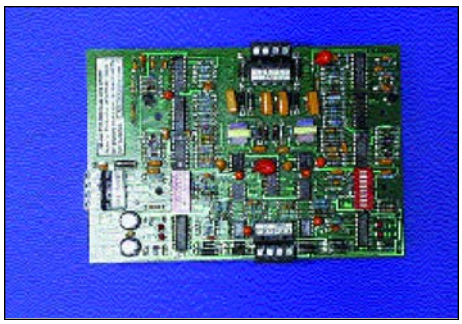
976166

TLO 530 ThornNet fibre optics interface assembly

557.180.148.A

TLO/TLD Housing - ADT branded

TLD-530



The Telephone Line Drive Module (TLD-530) is used to interface two (2) dedicated telephone line circuits to the TLK-530 module. The TLD-530 line driver module converts the RS-485 signals received from the TLK-530 network interface module to signals capable of being transmitted over the telephone line circuits.One TLK-530 supports two channels so only one module is required per controller for both single path and redundant path star connections. The interface allows for field configured baud rates and supports distances of up 3,000 meters. Up to two units can be fitted into a TLO/TLD Housing

Technical Specification

Dimensions: 170H x 120W x 20D mm

Product Codes

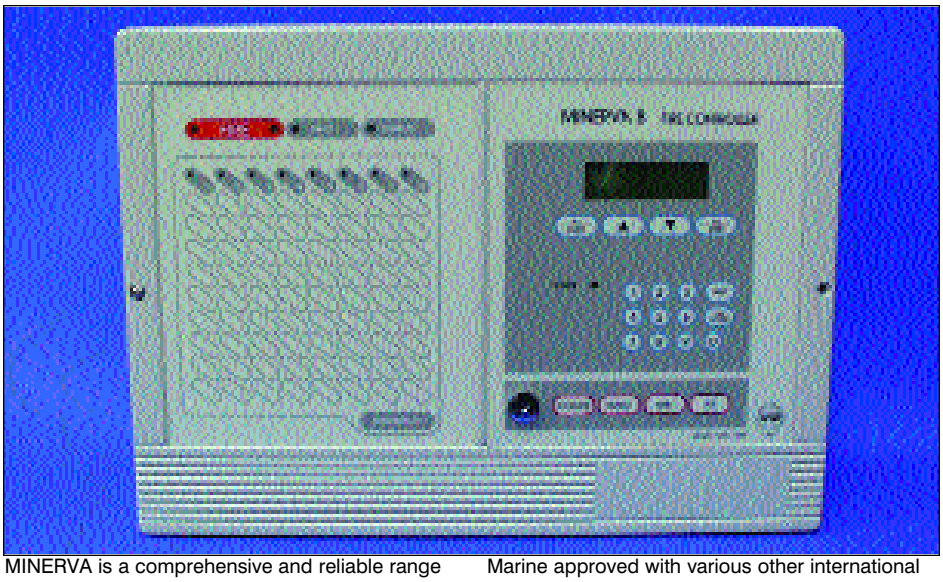
557.180.699

TLD 530 ThornNet direct line driver PCB

557.180.148.A

TLO/TLD Housing - ADTbranded

MINERVA Analogue Addressable Fire Controllers



MINERVA is a comprehensive and reliable range of networkable analogue addressable fire controllers with over 60,000 installations worldwide. MINERVA complies with BS5839 Pt 4 and can be installed to BS5839 Pt. 1.

The controllers and ancillaries are LPCB and Marine approved with various other international cross listings.

Technical Specification			
LPCB Approved	MINERVA 8	MINERVA 16E	MINERVA 80
Marine Approved (Note4)	-	T891M	T890M
Zones	8	16	80
Points	99	198	990
Zonal LED Display	8	16	80
LCD Display	80 Character	80 Character	80 Character
Sounder Circuits (2 off)	500mA each	500mA each	500mA each
Alarm Relay (1 off)	30Vd.c. @1.5A	30Vd.c. @1.5A	30Vd.c. @1.5A
Fault Relay (1 off)	30Vd.c. @1.5A	30Vd.c. @1.5A	30Vd.c. @1.5A
Product Codes			
Control Panel Surface Mounting	**557.180.564**	**557.180.550**	**557.180.556**
Control Panel Flush Mounting	**557.180.565**	**557.180.553**	**557.180.557**
Marine Panel	-	**557.180.402**	**557.180.401**
Repeater Panel Surface Mounting	**557.180.566**	**557.180.554**	**557.180.558**
Repeater Panel Flush Mounting	-	**557.180.555**	**557.180.559**
Marine Repeaters (T290/291)	**-**	**557.180.404**	**557.180.403**
Special Control Panel Variants	-		
Loop Powered Surface Mnt Panel	Note 3	Note 3	**557.180.569**
Loop Powered Flush Mnt Panel	Note 3	Note 3	**557.180.570**
Panel with Arabic overlay	-	**557.180.568**	**557.180.567**
Panel with Dutch overlay	**557.180.701**	**557.180.703**	**557.180.702**
Panel with Mandarin graphics display	-	**557.180.575**	**557.180.576**

Additional Components		
Note 1 :	**557.180.055**	MINERVA 8 and 16E battery fixing kit.
	557.180.065	MINERVA 80 battery fixing kit
	557.180.410	T890 battery fitting kit
Note 2 :	**557.180.203**	Loop Powered MINERVA 80 panels come complete with a special Loop Powered ALXM (loop card) . An additional loop power ALXM card (MINERVA-557.180.203) is required for each additional 2 loops.
	557.180.014	ALXM (2 loop) expansion card for standard MINERVA 80
	557.180.424	ALXM (2 loop) expansion card for T890
Note 3 :	**557.180.092**	MINERVA Loop powered insertion module converts MINERVA 8 and 16E to Loop Powered panels.
Note 4:	**557.180.454**	T890/891 Bulkhead mounting kit
	557.180.405	T690M Marine Power Unit

Features

- 8, 16 & 80 Zone networkable controllers
- Seamless peer to peer networking
- Full function repeaters
- LPCB Approved
- T890/891 Marine Approved variants
- Mandarin option
- Loop power sounder options
- Wide range of addressable devices
- Conventional system upgrade path
- Continuous and pulsing sounders
- Programmable mapping of signals for controlled evacuation
- On-site software configuration
- Powerful cause and effect software programming
- Remote printer, mimic and VDU options
- 500 event memory
- Pre-alarm capability
- Threshold compensation for optimum detector performance
- Detector condition monitoring advises when detector servicing is required
- Weekly test reminder and walk test facility
- Addressable intrinsically safe System 602
- Surface and flush mount options

Technical Specification (Excludes Marine)

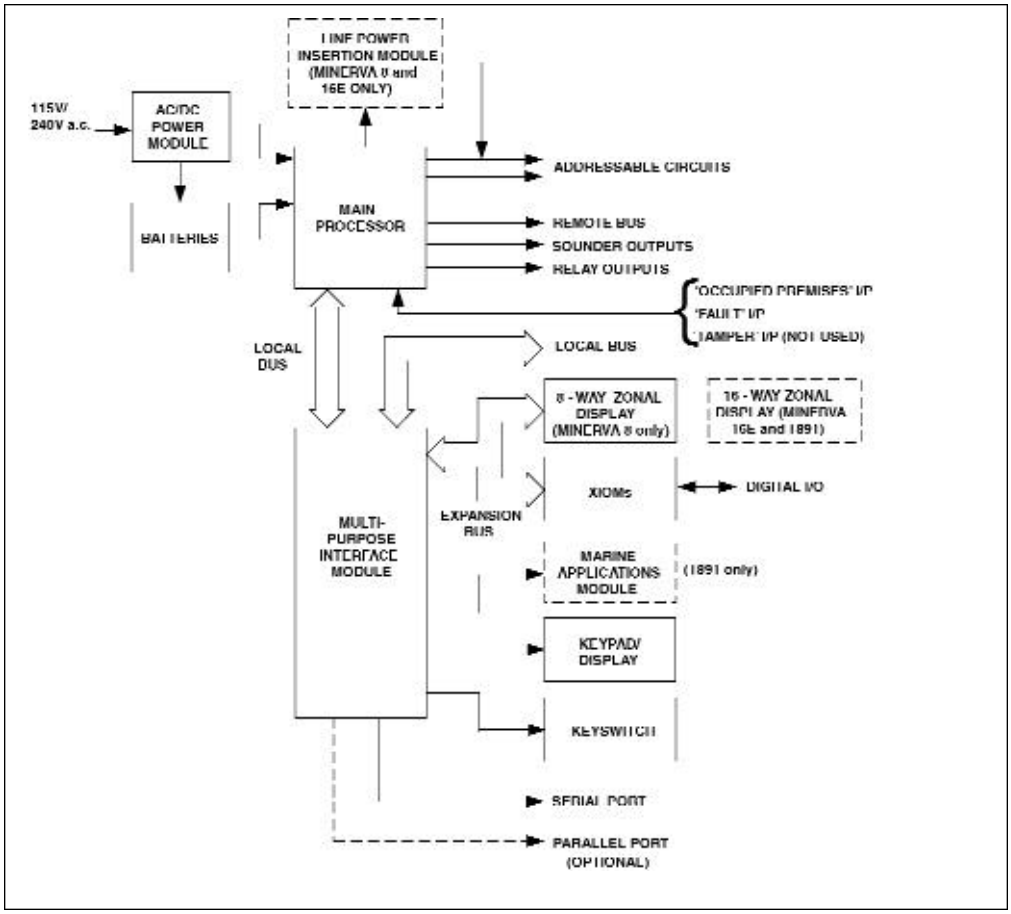
Dimensions:	320H x 440W x 140D mm
Approx. Weight:	7Kg
Colour:	Dawn Grey BS4800 10-A-03
Installation:	Surface or Semi-flush
Operating Temp:	-10°C to + 55°C
Storage Temp:	-20°C to + 65°C
Humidity:	Up to 95% RH (Non-condensing)
Housing Protection:	IP43
Mains Supply:	110V-120V/220V-240V a.c. ± 10% at 50/60HZ ± 5%
Secondary Supply:	24V d.c. Nominal

NOTE: A self contained 2.7 amp switch mode power supply together with 2 x 7 AH 12V or 4 x 10 AH 6V batteries may be fitted inside the main housing of the MINERVA 8 or MINERVA 16E - (**See Note 1** for battery fixing kits). The MINERVA 80 requires a separate housing for its power supply. Batteries up to 2 x 17 AH 12V may also be fitted in this housing. See AC Power Module.

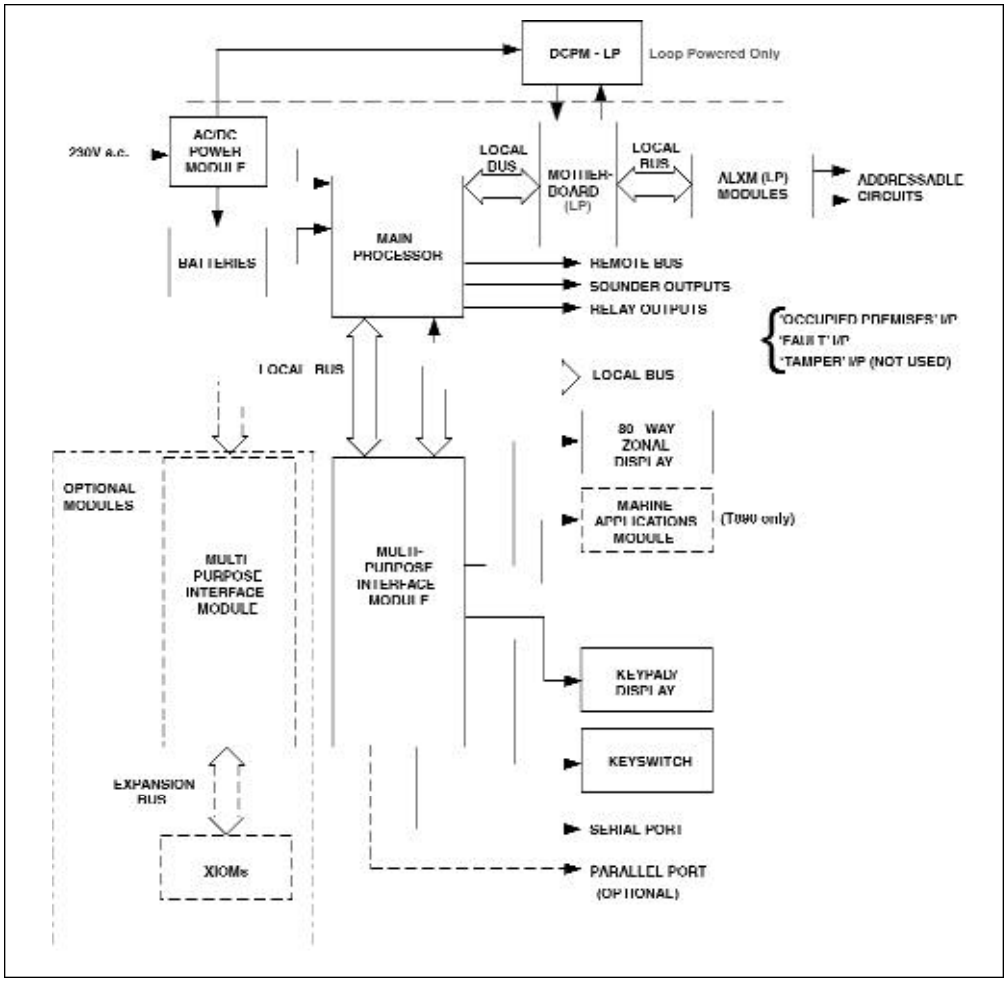
*Datasheet - Product Code **PB56** "Minerva 8, 16, 16E, 80 Panels"*

Manual - Vol015A-02-D1 "Minerva Range of Analogue Addressable Fire Controllers"

MINERVA 8-16E -T891 - Functional Schematic



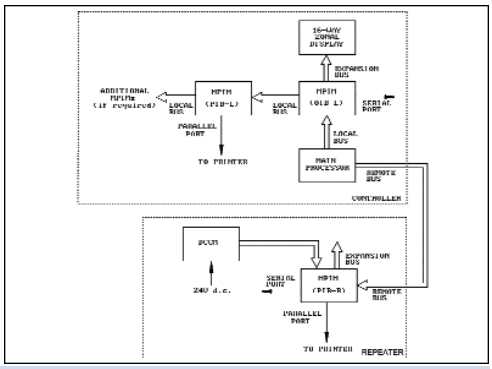
MINERVA 80- T890 - Functional Schematic



MINERVA Repeaters

The MINERVA fully functional repeaters are available for all models of the MINERVA series controllers. The repeaters are LPCB approved and offer the same control and monitoring facilities as the main panel. Each repeater includes one MPIM Module and up to seven repeaters can be attached to the remote bus of the main panel.

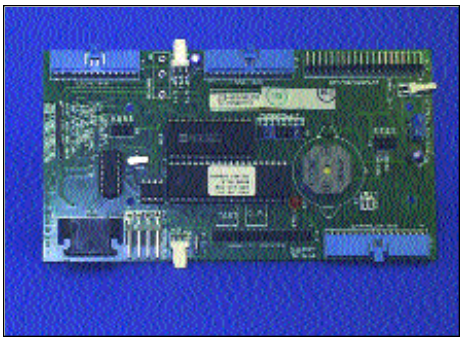
The technical specification for the repeater is the same as the main panel shown on the previous page, product codes are also shown there.



MINERVA - Auxiliary Expansion Outputs

*Datasheet - Product Code **PB56** "Minerva 8, 16, 16E, 80 Panels" Manual - Vol015A-02-D1 "Minerva Range of Analogue Addressable Fire Controllers"*

Multi Purpose Interface Module (MPIM)



The Multi-Purpose Interface Module [MPIM] is mounted on the rear of the front cover assembly and is used to provide interface facilities between the main processor card [MP] and a number of different peripherals. An MPIM must have its 'Personality' [configuration] set by means of plug-in headers to suit the particular application and set the device address. The board can perform a number of functions, each 'Personality' being a different combination of these functions.

All MPIMs come fitted with Version 3.2 firmware and a separate product code is available for upgrades - refer to TIB 0360 if necessary.

All MPIMs come fitted with a PROM (557.180.052) which enables an MPIM to be used with a serial printer. If retrofitting a MPIM without this PROM, for use with a remote printer, this chip is required.

Product Codes

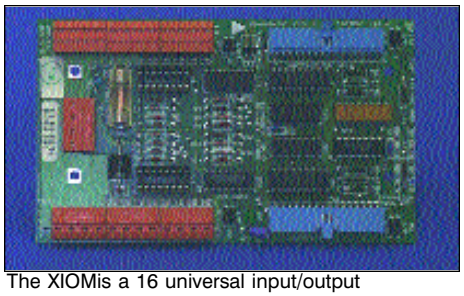
557.180.012

MINERVA Multi Purpose Interface Module [MPIM]

557.180.052

MINERVA serial printer driver kit (Spare)

Input/Output Expansion Cards (XIOM)



The XIOMis a 16 universal input/output expansion board. Up to 5 x XIOM cards can be driven from each MPIM subject to its personality settings.

The I/O on the XIOM can be set in banks of 8 to operate as follows:

- LED driver outputs (10mA source)
- Relay Driver Outputs (100mA sink)
- Voltage Monitor Input (8 - 30Vd.c. Normal)
- Volt Free Contact inputs

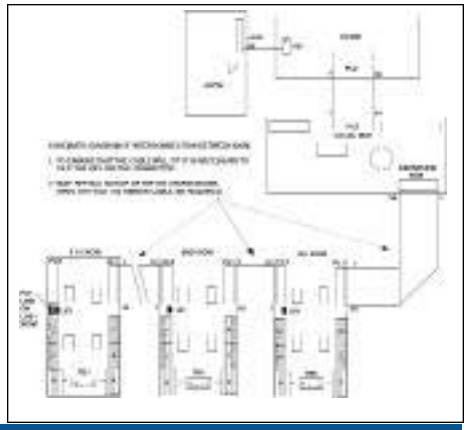
Technical Specification

Dimensions:	144H x 85W x 15D mm
Operating Temp:	-10 to +65°C
Storage Temp:	-20 to +65°C
Relative Humidity:	95% RH (Non-Condensing)

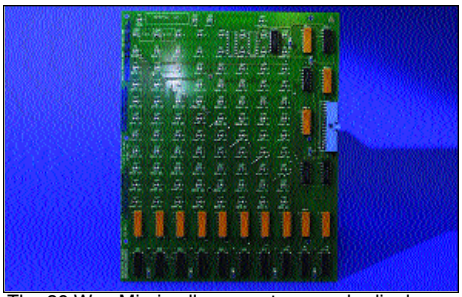
Product Code

557.180.016

XIOM MINERVA Input/Output Expansion Modul16 Way



Remote Mimics



The 80-Way Mimic allows custom-made display and presentation panels to be incorporated in the MINERVA addressable system. It is supplied as a single PCB, which may be mounted in an expansion box or on the rear of a free-standing panel, as required. It may be used to drive up to 80 zonal LED indicators, arranged in any configuration, together with two FIRE LEDs, one FAULT LED and one ISOLATE LED. These indicators operate in the same manner as the corresponding indicators on the panel.

A remote Mimic can be connected to the MPIM's configured as remote Mimic drivers via the remote bus. Up to 16 MPIMs may be connected on to the remote bus, each with a unique address [set on-board]. The difference between a Repeater and a Mimic is the local control facility which is not featured in a Mimic. Both Repeater and Mimic include audible and visible warning facilities.

Technical Specification

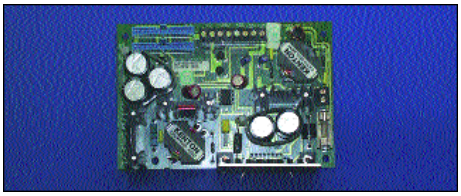
Dimensions:	235H x 190W mm
Operating Temp:	-10°C to +55°C
Storage Temp:	-20°C to +65°C
Relative Humidity:	Up to 95% RH Non Condensing

Product Code

557.180.005

MINERVA 80-Way Mimic Driver Module

DC/DC Converter (DCCM)



The DC/DC Converter produces regulated d.c. supplies from the ACPM outputs for use by the panel logic circuits. The DC/DC Converter is normally supplied only with MINERVA 80 and is fitted into the panel housing. A special version is available for loop powered MINERVA systems. An additional DC/DC converter may be used to supply power to two additional MPIM cards.

Product Codes

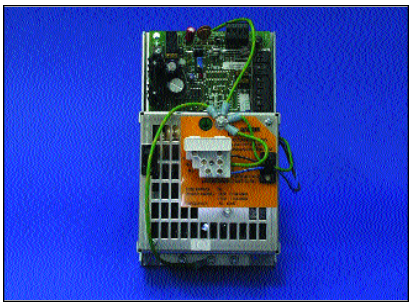
557.180.051

MINERVA DC/DC converter module

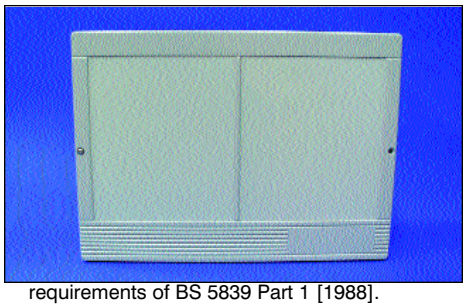
557.180.205

MINERVA loop power DC/DC converter module

AC Power Module (ACPM)



The AC Power Module [ACPM] is common to all MINERVA addressable models and supplies power to all the PCBs and other devices fitted. It contains an integral battery charger which continuously charges back-up batteries. These are required to supply the system in the event of a mains failure, in order to comply with the



requirements of BS 5839 Part 1 [1988].

Addressable versions of the ACPM are available. This unit reports fault conditions to the control panel via the addressable loop.

Technical Specification

Housing Dimensions:	320H x 400W x 140D mm
Colour:	Dawn Grey
Operating Temp:	-10 to +55°C
Storage Temp:	-20 to +65°C
Humidity:	Up to 95% RH non-condensing
Housing Protection:	IP43
Mains Supply:	110-120/220-240Va.c. ±10% 50/60Hz ±5%
Charger Current:	2.7A @27.6Vd.c.

Product Codes

557.180.001

MINERVA power module - non addressable ACPM

557.180.561

MINERVA surface mounting power box complete with non addressable ACPM

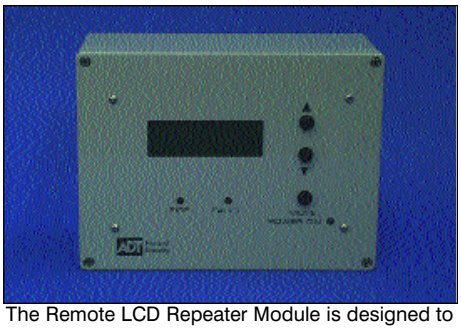
557.180.002

MINERVA power module - addressable ACPM

557.180.560

MINERVA surface mounting box complete with addressable ACPM

Remote LCD Displays



The Remote LCD Repeater Module is designed to provide an independent scrolling log of system status at numerous points within a building or site. The module interfaces directly to a serial printer port of the MINERVA addressable fire panel. If a local printer is already connected to the Panel's MPIM serial port, a second MPIM must be used.

Features

- Uses a back-lit 4x20 character alphanumeric display
- Provides an internal log of up to 150 events
- Provides internal audible warning of an event
- Allows the event log to be scrolled
- Local internal buzzer silence
- Connects to host panel's RS232 port (maximum cable length between panel and first repeater of 15m)
- Provides an external sounder to mimic the internal buzzer
- Can be connected to an unlimited number of other LCD Repeaters by using the RS232/RS422 converter (up to 1200m between repeaters)

The LCD repeater must not be used in the primary fire path. It must not be used as the sole warning that a fire exists.

Technical Specification

Dimensions:	150H x 200W x 75D mm
Material:	Bayblend polycarbonate/ABS alloy
Operating Temp:	-10°C to +55°C
Relative Humidity:	Up to 95% RH non-condensing
Power Supply:	200mA @24Vd.c.
Ext. Sounder relay:	500mA @24Vd.c.
EMC:	BS EN50081-1 and 50082-1

Product Codes

557.180.035.A

Remote LCD Repeater - ADT branded

557.180.035.T

Remote LCD Repeater - Thorn branded

557.180.062

MINERVA MPIM to printer lead (D type 25 way male)

557.180.667

MINERVA MPIM to printer/PC lead (D type 9 way female)

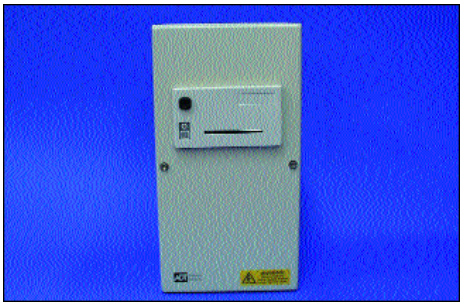
557.180.152

9 way gender changer for 557.180.667

557.180.151

RS232/422 converter for LCD Repeaters

MINERVA Printer Options



LOCAL PRINTER

A serial port is also available from the controller's MPIM, which may be used to drive a serial printer or a terminal/computer. In cases where more than one printer is required locally, it is possible to "piggy-back" an additional MPIM onto the MPIM on the front panel and this will, when connected to the local bus, provide the interfaces (up to a max of 8) for additional (printer) equipment.

REMOTE PRINTER

If it is required to have printers positioned at a remote location, an MPIM must be used. This MPIM has its address set on-board and is connected to the controller's remote bus. The connections between a MINERVA controller and remote printers are shown in the diagram below. An additional DC/DC converter module would typically be required to power the MPIM (the DC/DC converter can power two MPIM cards).

WALL MOUNTED PRINTER

This unit is designed to provide a wall-mounted printing facility for the MINERVA analogue addressable fire control panels. The unit is powered from 240V a.c. 50Hz and uses a 42 column printer with an RS232 serial input. It is designed primarily as a hard copy alarm/fault logging facility. A serial printer cable is used to connect the printer to an MPIM configured as a printer driver.

Technical Specification

Dimensions:	320H x 170W x 140D mm
Colour:	Dawn Grey
Operating Temp:	0°C to 40°C
Storage Temp:	-15°C to 40°C
Relative Humidity:	10% to 90% RH [non-condensing]
EMC:	BS EN 50081-1 and BS EN 50082-1
Operating Voltage:	180V to 264V a.c.
Protection:	External 2 Amp fuse
Power:	20W

WARNING:The mains supply must be from the same source as the MINERVA control panel and be isolated by the same device. The serial printer cable must be run in metal conduit to comply with the EU EMC Directive (89/336/EEC).

Product Codes

557.180.076.A

MINERVA Wall Mounted Printer (ADT branded)

557.180.076.T

MINERVA Wall Mounted Printer (Thorn branded)

557.180.202

MINERVA MPIM to printer (wall mounted) lead (right angled D type 25 way male)

557.180.079

Bezel for flush wall mounted printer

557.180.223

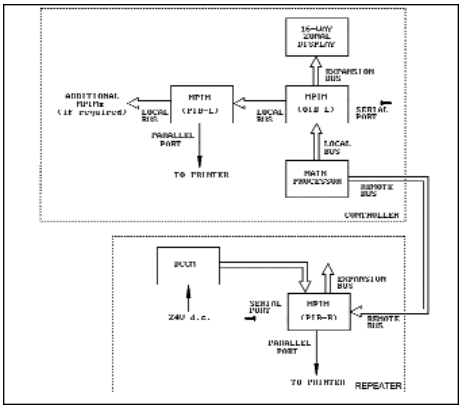
MINERVA wall mounting printing ribbon (Spare)

557.180.052

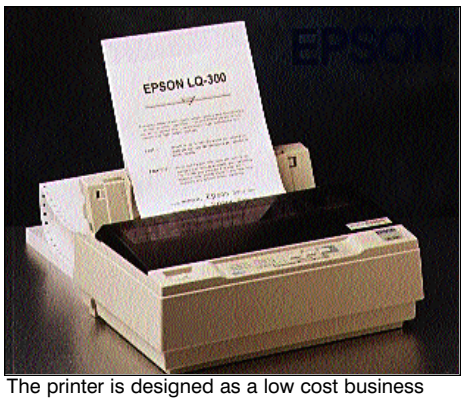
MINERVA Serial Printer driver kit

509.022.008

Spare printer paper



Desktop Printer



The printer is designed as a low cost business printer ideally suited for mounting adjacent to the fire control panel.The LQ-300+ combines high performance with paper handling flexibility and quiet operation.

Features

- 300 cps draft/ 90 cps LQ.
- Quiet operation
- Lightweight and compact design
- 9 LQ fonts
- 2 paper feed paths
- Convertible push/pull tractor
- Paper guide
- Auto loading
- Paper park
- Cable feed recess
- Epson LQ standard terminal emulation available
- Parallel and serial interface

Technical Specification

Dimensions:	159H x 366W x 275D mm
Weight:	4.4kg
Operating Temperature:	5°C to 35°C
Storage Temperature:	-15°C to 40°C
Relative Humidity:	10% to 80% RH [non-condensing]
Operating Voltage:	180V to 264Va.c.

EMC: BS EN 50081-1 and BS EN 50082-1

Product Codes

557.180.239

MINERVA printer LQ-300+

557.180.220

LQ80 ribbon black (spare) for use with desktop printer.

557.180.062

Minerva MPIM to printer lead (D type 25-way male)

Pager Interface

The MINERVA pager system is designed to provide a facility to signal all text messages or alarm/fault messages from a local transmitter to the pagers.

The transmitter connects to the serial printer port of an MPIM, if a local printer is connected to the controllers MPIM serial port, a second MPIM must be used. The pager system requires a +12V d.c. connection (from the MINERVA) and a serial port connection. If the transmitter needs to be located further than 2 m from the MINERVA, then a non-standard serial printer cable may be used, up to a maximum distance of 14m.

CAUTION: *Before any installation is carried out, an on site radio paging license must be obtained by the customer. Care should be taken when designing pager systems. Normal practice indicates that a site survey should be done. Contact Product Management for additional advise on site surveys.*

The Type A alarm pager can display alarm/fault messages. The Type A maintenance pager displays all messages sent by MINERVA.

The pagers:-

- Display messages sent out by the MINERVA as displayed on the Minerva LCD
- Internal log of up to 40 events
- Audible and/or vibrate warning of event
- Allows the event log to be displayed.

The transmitter:-

- Connects using a 9way D type MINERVA interface lead
- Can be setup for transmission to Type A
- Using standard aerial, provides a 500 metre sphere of transmission in open air

Technical Specification

Dimensions:	328H x 190W x 75D mm
System operating voltage:	12 to 13.8 Vd.c.
Effective radiated power:	500mW
Frequency range:	50-470 MHz
Channel spacing:	25KHz
TX baud rate:	512 or 1200

Type approval ETS 300 224, MPT1383 Cert No 13249, EC type approved to ETS 300 682 Approval No. 13331

Product Codes

577.002.001

Pager Transmitter

577.002.002

Type A alarm pager

577.002.003

Type A maintenance pager

577.002.007

Pager aerial 60 db gain up to 1km

577.002.008

Optional feeder cable

Manual - Vol08A-05-D1 "Ancillaries Manual"

MINERVA CONSYS and Firmware

The function of the Consys configuration software is to customise a MINERVA addressable panel system to the requirements of the customer. Configuration is performed on the basis of data obtained from the customer. This data should have been documented by the system designer using form 180 (available from the website) and includes the following information:

- The number and location of detectors and other ancillaries.
- The addresses of the above devices
- The 'zoning' requirements
- The number and location of any interface boards
- The addresses of the above boards
- Bell mapping options
- Co-Incidence grouping
- System fire options
- Network configuration

This information is fed into 'CONSYS' and stored on a floppy disk. This disk can be used with a laptop computer and downloaded into the panel via a download lead. Most laptop computers have 9 way serial comms ports, but sometimes one may require a 25 way serial download lead. A "dongled" variant of Consys exists which only permits Consys to be installed on PCs with a dongle. Additionally variants also exist which restrict access to Consys features i.e. customer and distributor variants.

A number of Consys variants are available e.g. UK (non-dongled), UK dongled, UK Customer, UK distributor, US (non-dongled), Dutch (non-dongled), Marine (dongled).

Registered copies of the Consys configuration software are available from the technical distribution department, Walthamstow, London E17 Tel +44 (0) 208 919 4004.

*Datasheet - Product Code **PB56** "Minerva 8, 16, 16E, 80 Panels"*

Manual - Vol015A-02-D1 "Minerva Range of Analogue Addressable Fire Controllers" and Vol011A-01-XX "Software Operating Manual"

Product Codes

557.180.063

MINERVA MPIM to PC (D25) serial lead assembly

557.180.667

MINERVA MPIM to PC (D9) serial lead

557.180.105

MINERVA full CONSYS software key (dongle)

557.180.106

MINERVA customer/distributor software key (dongle)

557.180.234

Customer CONSYS pack vers 12.1

Firmware Upgrade	M16E	M80	ALXM
Ver 12.0	557.180.831	557.180.832	557.180.833
Ver 12.1	557.180.155	557.180.156	557.180.157
Ver 12.2	557.180.159	557.180.160	557.180.161
Ver 12.3	557.180.163	557.180.164	557.180.165
Ver 12.4	557.180.167	557.180.168	557.180.169

Housings

MINERVA panels are supplied with a housing. Matching dawn grey housings are available for housing other equipment along side the MINERVA panel. The general purpose housing is available in surface and flush models with matching diecast door.

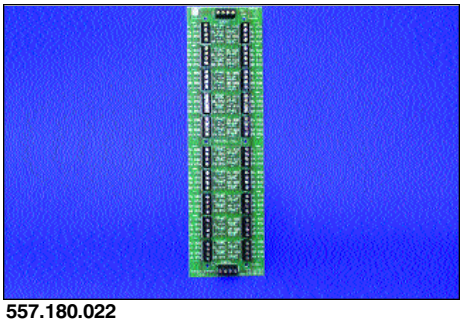
Other housing options include the terminal chamber PCB which provides neat terminations for addressable loop field wiring.

The optional gland cover provides a neat installation for the surface mount installations and the 19″ rack mount kit allows the surface mount MINERVA panel or general purpose housing to be fitted in a 19″ rack.

Product Codes

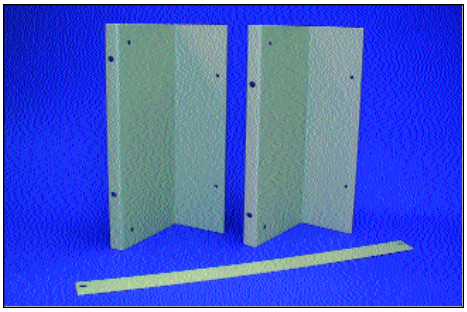
557.180.033

MINERVA general purpose housing flush



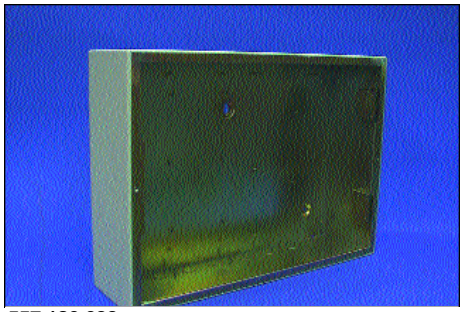
557.180.022

MINERVA terminal chamber PCB assembly



557.180.452

MINERVA Marine 19"rack mounting kit for use with surface mounting housings

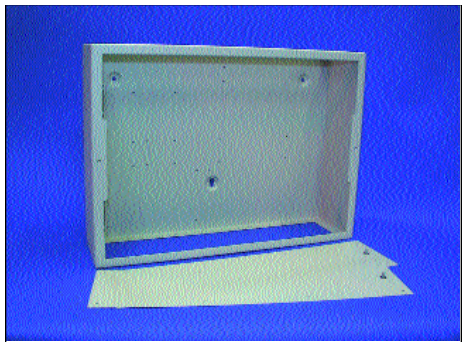


557.180.032

MINERVA general purpose housing surface

557.180.021

MINERVA plain cover assembly for use with general purpose housings - see below



557.180.034

MINERVA expansion housing surface

Marine Housing Options

557.180.406 MINERVA Marine Terminal Chamber

557.180.410 MINERVA Marine Battery Fitting Kit

557.180.454 MINERVA Marine Bulkhead Mount

*Datasheet - Product Code **PB56** "Minerva 8, 16, 16E, 80 Panels"*

Manual - Vol015A-02-D1 "Minerva Range of Analogue Addressable Fire Controllers"

MINERVA Spares

The following additional items are available as standard spares. Other components can be supplied as specials.

Product Codes

555.180.002

MINERVA 16E front cover assembly

557.180.408 (Available on BSO)

T890 Front cover assembly

555.180.003

MINERVA 80 front cover assembly

557.180.407 (Available on BSO)

T891 Front cover assembly

557.180.010

MINERVA 80 motherboard PCB

557.180.054

MINERVA 16 mounting plate kit

557.180.200

MINERVA main processor PCB no software fitted

557.180.204

Motherboard loop powered for use with MINERVA 80 (spare)

557.180.209

Keyswitch assembly for use with MINERVA controllers (spare)

557.180.208

MINERVA spare keys (used on MINERVA controllers mid '94 Onwards)

557.180.722

MINERVA 80 cover assembly dutch (spare)

*Datasheet - Product Code **PB56** "Minerva 8, 16, 16E, 80 Panels"*

Manual - Vol015A-02-D1 "Minerva Range of Analogue Addressable Fire Controllers"

MINERVA Addressable Modules

An extensive range of ancillary modules has been specifically designed for use with the MINERVA 8, 16E and 80 range of Fire Control Panels. The M520 range of ancillary modules provide the MINERVA Panel with a wide degree of systems application flexibility. This allows the field addressable loop from the control panel to both receive inputs to the system and control outputs from it.

This broad range of modules allows the scope of the fire detection system to be significantly extended beyond a simple fire detector - alarm sounder based alarm system. The command modules enable fire doors to be closed, fire dampers to be controlled, provide an interface to shut down HVAC equipment. Other applications include an interface between shopping centre tenants' premises and the landlords' central control system.

With the high systems integrity offered on the MINERVA Panel the command modules can also be used to control a public address based building evacuation system.

Features

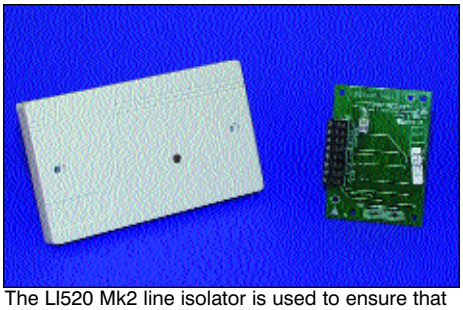
- Communications and control interface to MINERVA Fire Panels
- High Systems Integrity
- Allows remote sounder circuits
- Allows loop powering of sounders and/or beam detector units
- Monitoring of external equipment, e.g. smoke dampers
- Reduced installation cost
- Removes the need for separate plant control circuits

*Datasheet - Product Code **PSF86** "520 Series Ancillary Equipment" (unless otherwise indicated).*

Manual - Vol08A-02-D "Ancillaries Manual"*

** Design section indicated next to product code.*

LI520 MK2- Line Isolator Module



The LI520 Mk2 line isolator is used to ensure that a short circuit fault on the addressable loop will not cause a total systems failure. LI520 Mk2's effectively contain the fault to specific areas of the loop. Line isolators should be used at the boundary of each zone so that no more than a single zone is made inoperative during a short circuit condition. This feature is a requirement of BS5839 Part 1 1988. The LI520 Mk2 is also fitted with a amber LED to indicate locally when the isolator has been tripped.

The maximum number of line isolators per MINERVA loop is 12. There are also two isolator circuits built into the MINERVA control panel loop drivers (one for each end of the loop).

The LI520 Mk2 takes its operating power from the MINERVA loop.

The module is not addressable and will therefore not take an address on the loop.

Technical Specification

Powered:	Loop
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions:	60H x 84W x 14D mm

Product Codes

545.001.007

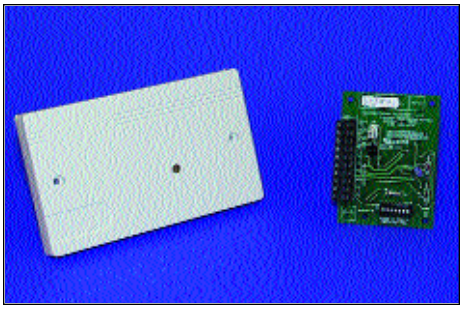
MINERVA LI520 Mk2 line Isolator module

545.001.009

LI520/M520 line isolator and cover assembled

Manual - Vol08A-02-D20 "Ancillaries Manual

CM520 - Contact Monitoring Module



The CM520 module provides the facility to monitor an external contact, e.g. fire door monitor. This monitored point can then be used as a control input for the MINERVA panel which is activated when the monitored contact is either open or closed. A delay between the monitored contact opening/closing and the activation of the control input can be specified within the control panel settings. The CM520 takes its operating power from the MINERVA loop. The module is addressable and will therefore take one address on the loop.

Technical Specification

Powered:	Loop
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions:	60H x 84W x 14D mm

Product Codes *(Vol08A-02-D3)*

555.180.021

CM520 contact monitor module (1 input)

555.180.026

CM520/M520 contact module and cover assembled

TM520 - Timer Module

The TM520 provides an output that can be activated based on a delay time. If either the key-switch on the module is activated, or a predefined event within the control panel occurs then a timed delay (set between 10 minutes and 21 hours 10 minutes) is started. When the delay reaches zero the TM520 output is activated. The unit sounds an internal buzzer and shows a red LED when the output is active, and shows a yellow LED when the timer is counting down. To provide a warning that the delay is nearly over, the red LED and the buzzer will pulse 5 minutes before the end of the delay .

The TM520 requires a separate 24Vd.c. supply to operate. The module is not addressable and will therefore not take an address on the loop.

Technical Specification

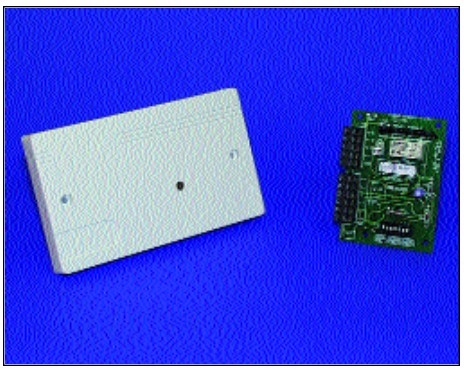
Powered:	24Vd.c.
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions:	87H x148W x 14D mm

Product Code *(Vol08A-02-D16)*

557.180.423

TM520 timer module - non addressable

RM520 - Relay Module



The RM520 provides one volt-free change-over relay contact rated at 1A @ 24Vd.c. Command signals to drive the relay are configured in the MINERVA control panel software with the trigger point being defined as a detector or other event programmed into the system. The relay contacts are monitored and the state (activated/de-activated) is reported back to the control panel. The RM520 is also fitted with a red LED to indicate locally when the relay is operated.

Typical applications for the RM520 include fire door control or lift control. The RM520 takes its operating power from the MINERVA loop. The module is addressable and will therefore take one address on the loop.

Technical Specification

Powered:	Loop
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions:	60H x 84W x 14D mm

Product Codes *(Vol08A-02-D1)*

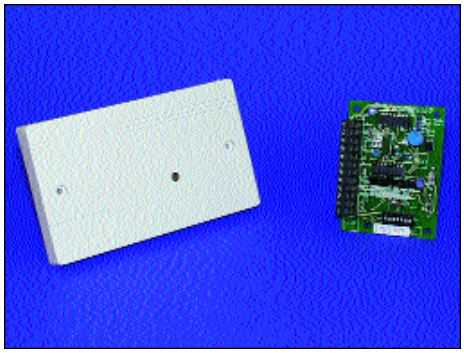
568.001.011

RM520 relay module (1 x 24Vd.c. rated relay)

568.001.017

RM520/M520 relay module and cover assembly

DM520 - Conventional Detector Module



The DM520 is used to interface a single zone of conventional detectors onto the MINERVA analogue addressable loop. This provides a cost effective and easy method of extending existing conventional systems or a future upgrade path for new conventional systems. The DM520 is also fitted with a red LED to indicate locally when the associated conventional zone has entered an alarm condition. The DM520 requires a separate 24V d.c. supply to operate. The module is addressable and will therefore take one address on the loop.

Technical Specification

Powered:	24V d.c.
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions:	60H x 84W x 14D mm

Product Code *(Vol08A-02-D2)*

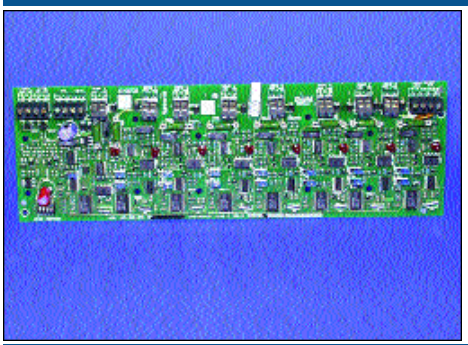
517.035.012

DM520 conventional detector module

517.035.018

DM520/M520 detector module and cover assembled

MDM521 - Multi-DM Module



The MDM521 module is used to interface conventional detection zones onto the MINERVA analogue addressable loop in a similar way to the DM520. The MDM521, however, can be configured to interface up to 8 zones of conventional detectors rather than the DM520's single zone. The module has an LED for each of the 8 zones which will show red when the zone is in alarm and yellow if the zone is in fault. This module provides a cost effective method of interfacing several conventional zones onto an addressable loop.

The MDM521 requires a separate 24Vd.c. supply to operate. The module is addressable and will take as many addresses as there are zones being monitored (i.e. between 1 and 8).

Technical Specification

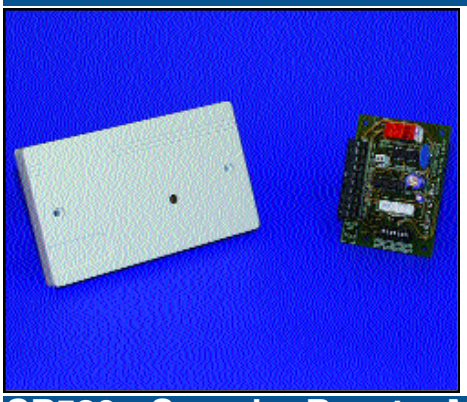
Powered:	24Vd.c.
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions:	290H x 88W x 30D mm

Product Code *(Vol08A-02-D25)*

517.035.017

MDM521 Multi circuit conventional detector module

SM520 - Sounder Driver Module



The SM520 module is used to provide an output to alarm sounders or visual warning devices in response to a control signal from the control panel. The devices are controlled directly from the SM520 on the addressable loop rather than from outputs on the control panel, thereby significantly reducing wiring costs. The output wiring to the alarm devices is fully monitored and the module has the capability to drive up to a maximum of 500mA alarm device load. If higher alarm device loads are required then an SB520 sounder booster module must be used in conjunction with the SM520. The SM520 requires a separate 24Vd.c. supply to operate. The module is addressable and will therefore take one address on the loop.

Technical Specification

Powered	24Vd.c.
Temperature Range	-10°C to 70°C
Operating Humidity	up to 95% RH non-condensing
Dimensions	60H x 84W x 14D mm
Alarm load max:	24Vd.c. @500mA

Product Code *(Vol08A-02-D6)*

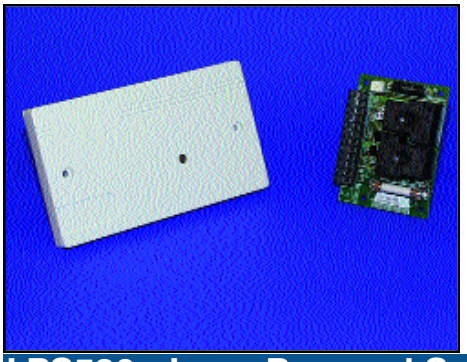
577.001.022

SM520 sounder driver module

577.001.032

SM520/M520 sounder module and cover assembled

SB520 - Sounder Booster Module



The SB520 sounder booster module is used in conjunction with the standard SM520 to drive one or more alarm sounder devices from the addressable loop rather than directly from control panel outputs. The SB520 is required when the alarm sounder load to be driven from the SM520 is greater than 500mA. Using the SB520 increases the sounder load capacity to 15A.

The SB520 requires a separate 24Vd.c. supply to operate. The module is not addressable and will therefore not take an address on the loop.

Technical Specification

Powered:	24Vd.c.
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions:	60H x 84W x 14D mm
Alarm load max:	24Vd.c. 15A

Product Code *(Vol08A-02-D7)*

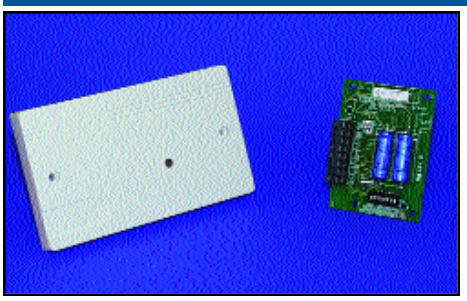
577.001.023

SB520 sounder booster module

577.001.033

SB520/M520 sounder booster module and cover assembled

LPS520 - Loop Powered Sounder Module



The LPS520 module provides control outputs for alarm sounders in the same way as the SM520 module, except that no external power supply is required as the sounders draw their power directly from the addressable loop. A maximum of 4 LPS520 modules can be used per loop, each driving a maximum of 6 Banshee sounders.

The LPS520 takes its operating power from the MINERVA loop.

The module is addressable and will therefore take one address on the loop.

Technical Specification

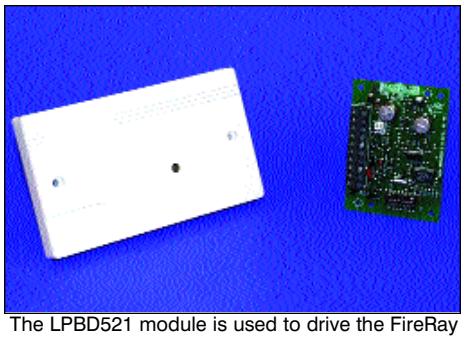
Powered:	Loop
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions:	60H x 84W x 14D mm

Product Code *(Vol08A-02-D19)*

577.001.027

LPS520 Loop powered sounder module

LPBD521 - Loop Powered Beam Detectors



The LPBD521 module is used to drive the FireRay 2000 beam detector units directly from the MINERVA loop. A single LPBD521 can be used to power the analyser unit, the beam receiver unit and the transmitter unit. Alternatively, two separate LPBD521's can be used with one to power the analyser unit and receiver units and the second to drive the transmitter separately, either from the same loop or a different loop. Up to 8 LPBD521's can be used per loop.

The module is addressable and will therefore take one address on the loop.

Technical Specification

Powered	Loop
Temperature Range	-10°C to 70°C
Operating Humidity	up to 95% RH non-condensing
Dimensions:	60H x 84W x 14D mm

Product Code

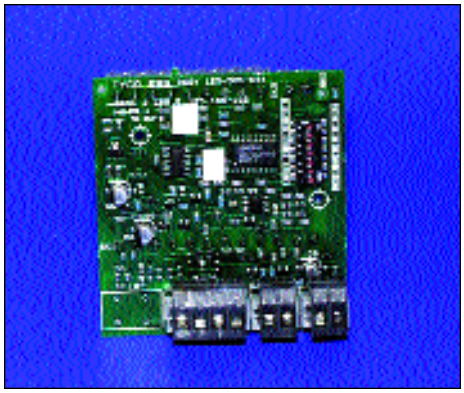
557.180.217

LPBD521 loop powered beam detector interface module for use with FireRay 2000

*Datasheet - Product Code **PSF85** "Fireray 2000 Optical Beam Smoke Detector"*

Manual - Vol08A-02-D26 "520 Series Ancillary Equipment"

AM921 Addressable Aspirating Interface



The AM921 module is used as an interface between the MINERVA control panel and the LaserPLUS and Scanner aspirating detectors. The module is fitted inside the aspirating detectors housing at the relay output location and also takes its power from the detector unit.

The module is addressable and will therefore take one address on the loop.

Technical Specification

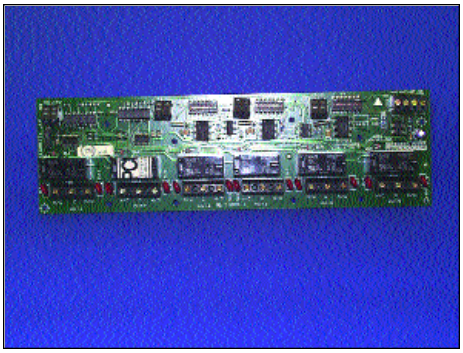
Powered:	Loop
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions 921:	Fits in VLS/VLP

Product Code *(Vol08A-02-D33)*

546.004.007

AM921 aspirating interface module

PI521 - Plant Interface Module



The Plant Interface module is an addressable, multi input/output device that is used to interface plant equipment to the MINERVA control panel. Inputs can be used for plant monitoring whilst the outputs can be driven from the MINERVA control panel as required.

The module is configured in one of three Modes:

PI521/2 2 inputs and 2 outputs (Takes 4 addresses on the loop; max per loop is 24)

PI521/4 4 inputs and 4 outputs (Takes 8 addresses on the loop; max per loop is 12)

PI521/6 6 inputs and 6 outputs (Takes 12 addresses on the loop; max per loop is 8)

All outputs are rated at 240V 5A. The PI521 requires a separate 24Vd.c. supply to operate.

Technical Specification

Powered:	24Vd.c.
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions:	72H x 245W x 23D mm

Product Codes *(Vol08A-02-D18)*

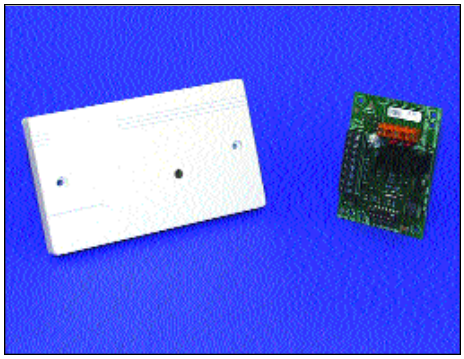
546.004.006

PI521 MINERVA plant interface module

547.004.001

DIN rail mounting kit

SD520 - Smoke Damper Interface Module



The SD520 provides two monitored inputs and one relay output rated at 240V @ 5A. The SD520 is ideally suited to driving smoke damper units directly from the MINERVA loop. One of the inputs can optionally be used to monitor the action of the module relay externally, i.e. at the smoke damper unit. The SD520 is fitted with a red LED to indicate locally when the relay is operated.

The SD520 requires a separate 24V d.c. supply to operate. The module is addressable and will therefore take one address on the loop.

Technical Specification

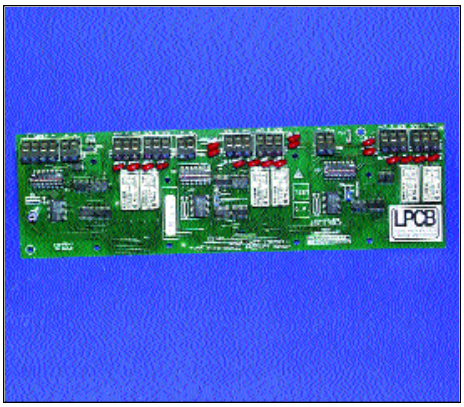
Powered	24Vd.c.
Temperature Range	-10°C to 70°C
Operating Humidity	up to 95% RH non-condensing
Dimensions:	60H x 84W x 14D mm
Relay output rating:	240Va.c. @ 5A

Product Code *(Vol08A-02-D17)*

568.001.014

SD520 smoke damper interface module (2 inputs and 1 output)

SU521 - Shop Interface Module



The SU251 is an addressable, multi input/output device that is used to interface other fire or security systems into the MINERVA control panel. Inputs can be used for taking signals from other systems (e.g. taking individual shop security systems into the central shopping centre system) whilst the outputs can be used to send control signals from the MINERVA back to the individual tenant's system. The SU521 can be configured in one of three formats:

SU521/2 2 inputs and 2 outputs (Takes 4 addresses on the loop; max per loop is 24)

SU521/4 4 inputs and 4 outputs (Takes 8 addresses on the loop; max per loop is 12)

SU521/6 6 inputs and 6 outputs (Takes 12 addresses on the loop; max per loop is 8)

All outputs are change-over contacts rated at 24V 1A. The SU521 takes its operating power from the MINERVA loop.

Technical Specification

Powered:	Loop (0.54mA)
Temperature Range:	-10°C to 70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions:	72H x 245W x 17D mm

Product Codes *(Vol08A-02-D15)*

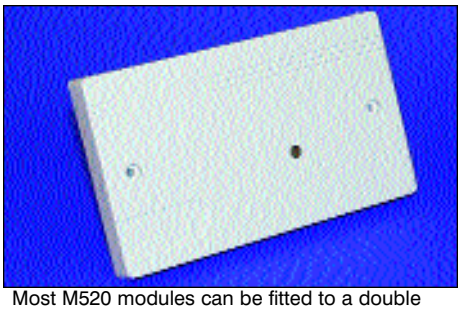
568.001.013

SU521 shop unit interface module

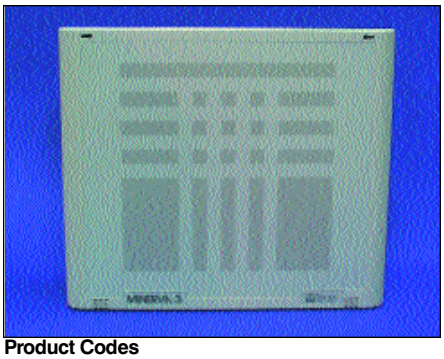
547.004.001

Din rail mounting kit

Ancillary Covers and Housings



Most M520 modules can be fitted to a double gang MK style backbox using the M520 ancillary cover. Where several devices are mounted in one place the ANC3 houses 3 x M520 modules and the ANC8 houses 8 modules, expandable to 16 using the STK8 stacking kit.



Product Codes

517.035.007

M520 Ancillary cover for use with M520 modules

557.180.096.A

ANC-8 MINERVA ancillary housing ADT Branded

557.180.096.T

ANC-8 MINERVA ancillary housing Thorn Branded

557.180.095

STK-8 MINERVA ancillary stacking kit for use with ancillary housing 557.180.096

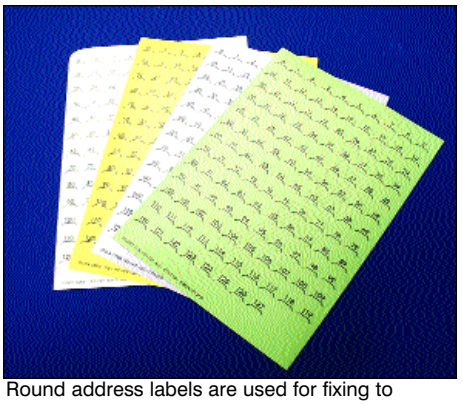
557.180.097.A *(Vol08A-02-D18)*

ANC-3 MINERVA ancillary housing ADT Branded

557.180.097.T *(Vol08A-02-D18)*

ANC-3 MINERVA ancillary housing Thorn Branded (See picture)

Minerva Loop and Zone Labelling



Round address labels are used for fixing to addressable devices and are provided in 10 different colours to allow differentiation between loop wiring.

Product Codes

Round Labels

599.047.001

Label loop A white

599.047.002

Label loop B yellow

599.047.003

Label loop C purple

599.047.004

Label loop D green

599.047.005

Label-loop E grey

599.047.006

Label-loop F blue

599.047.007

Label loop G orange

599.047.008

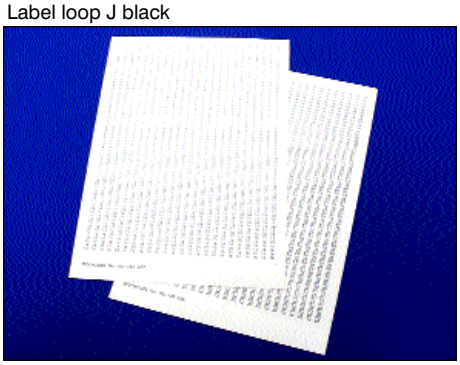
Label loop H red

599.047.009

Label loop I dark blue

599.047.010

Label loop J black



Zone labels are affixed to address labels to produce a combined address/zone label.

Product Codes

Zone Labels

599.047.011

Label zones 1-16

599.047.012

Label zones 17-32

599.047.013

Label-zones 33-48

599.047.014

Label-zones 49-64

599.047.015

Label-zones 65-80

Addressable Fire Systems - UL/FM Approved

Analogue Addressable TFX-400 Series

TFX400

The AUTOCALL TFX-400 is a self contained, small addressable panel in a single cabinet. The AUTOCALL TFX-400 includes 2 analogue, addressable signalling line circuits that provide 99 points each.
The AUTOCALL TFX-400 uses proven technology, used in the TFX-500M and TFX-800M fire alarm and detection systems. The AUTOCALL TFX-400 is designed to be used with conventional or analogue, addressable fire detection devices, in any combination. As a stand alone panel, the AUTOCALL TFX-400 meets the needs of any small-to-mid size building or building complex; networking capability allows the TFX-400 to be used in larger buildings or building complexes.

Features

. 198 Analogue addressable points
. Fully upgradable
. Ideal for retrofit applications
. System status information at a glance
. One panel size with many features of larger TFX panels
. Compact cabinet fits between wall studs
. Cabinet space for up to 17 Amp hour battery
. Semiflush or surface mount flexibility
. Low cost

Features - *Options*

. Remote OCP and virtual front panel
. Networking capability
. Graphical user interface

Listings & Approvals

. UL Listed, File S2561
- Local
- Local with Releasing Device Service
- Auxiliary
- Remote Station (Protected Premises Unit) Proprietary (Protected Premises Unit)
- Central Station (Protected Premises Unit)
- Fire Alarm Control Unit
- Proprietary Receiving Unit
- Central Station Receiving Unit

. CSFM No. 7165-1493:147
7170-1493:167

Technical Specification

Note: *AUTOCALL TFX-400 is intended for use within a building interior, free from exposure to moisture, condensation and excessive dust.*

Operating Temp.:	0 to +49ºC
Humidity:	85% Non-Condensing
Loop Styles:	NFPA 72 Style 4 & 6. Line isolators optional for short circuit isolation
Max. Add Per Loop:	99
Max Loops per Sys:	2
Operating Voltage:	26Vd.c., 300mA
Supervisory Current:	20mA per loop (plus load) 24mA per loop (plus load)
Resistance:	Max. 75Ohms
Capacitance:	Max. 0.5 microfarad (mutual)
Inductance:	Max. 1.5 millihenry (total)

Product Codes

557.180.625
TFX400 Two loop UL/FM approved fire control panel. Supplied in grey with Thorn Security branding.

976422
TXF400 Two loop UL/FM approved fire control panel. Supplied in red with Grinnell branding.

Analogue Addressable TFX-500/800 Series

557.180.624

The AUTOCALL TFX-500M, TFX-800M, TFX-500MV and TFX-800MV comprise the AUTOCALL TFX family of self contained Fire Alarm Control Panels. CALL TFX-500M provides up to 198 analogue addressable initiating and output devices, while the AUTOCALL TFX-800M expands the capacity to 990 devices. The basic system hardware and software is common for both AUTOCALL TFX-500M and TFX-800M, therefore the 500M can be expanded to 800M on site.
AUTOCALL TFX controls are designed to be used with conventional or analogue addressable fire detection devices, in any combination thereof. Engineered with advanced microprocessor technology, these fire control panels provide a dynamic level of applications flexibility. The exclusive CONSYS software configuration tool for site specific user programming easily guides the trained installer through a menu prompted decision process.

557.180.623

Features

. Conventional and analogue addressable fire detection
. 198 Analogue addressable initiating and output devices plus 1600 discrete inputs or outputs (TFX-500M)
. 990 Analogue addressable initiating and output devices plus 1100 discrete inputs or outputs (TFX-800M)
. TFX-500M may be expanded to TFX-800M on site
. 80 Character LCD display; 40 user defined message characters
. Power limited, all circuits
. Integral LED zonal or group annunciator
. Degrade mode in TFX-800M operates evacuation signals if CPU failure occurs before or during an alarm
. Smoke detector condition monitoring with automatic environmental compensation
. Individual smoke detector sensitivity selectable from the operator interface
. Historical event log for view or print
. Fully site programmable
. Solo test and alarm verification per group or point
. Automatic time control functions with holiday exceptions
. Six access levels with unique 0911 Fire Department Access
. Automatic and manual detector sensitivity adjustment
. Alarm resound by zone or device
. Modular, expandable
. Single, dual and multi-channel voice systems, 25 and 70 VRMS
. Networking capability to the graphical user interface from any TFX panel.

Listings & Approvals

. UL 864 Listed for Local, Auxiliary, Remote Station and Proprietary Receiving Station Service; File S2561
. CSFM No. 7165-0062:161
. MEA No. 415-92-E
. FM ID No. OX2A8.AY

NOTE: *AUTOCALL TFX-500M and TFX-800M are intended for use within a building interior, free from exposure to moisture, condensation and excessive dust.*

Technical Specification

Temperature Range:	0ºC to 49ºC
Relative Humidity:	85% Non Condensing
Loop Styles:	NFPA 72 Style 4 and 6. Line isolators optional for short circuit isolation
Max. Add. Per Loop:	99
Max. Loops Per Sys:	2 (TFX-500M) 10 (TFX-800M
Voltage:	26Vd.c., 300mA
Supervisory Current:	20mA per loop (plus load)
Alarm Current:	24mA per loop (plus load)
Resistance:	Max 75 Ohms
Capacitance:	Max. 0.5 microfarad (mutual)
Inductance:	Max. 1.5 millihenry (total)
Max. Continuous Dis:	6500 feet

Product Codes

557.180.623
TFX-500M 2 loop fire control panel with red architectural door. Grinnell branded in 3 tier housing with FCM/OCM and 16 LED indicator. Supplied complete with 4” shallow backbox. Other colours and branding available on request.

557.180.624
TFX-800M Fire detection panel with red architectural door and Grinnell branding in 7 tier housing with FCM/ODM and 80 LED indicator. Supplied prebuilt complete with 6” backbox. Other colours and branding available on request.

Remote Operator Control Panel

The Remote Operator Control Panel (remote OCP) is designed for use with the AUTOCALL TFX series systems to provide system operating controls at a remote location. The unit is suitable for mounting in lobbies, vestibules or anywhere were space is a premium. Three configurations are available and each are housed in small, attractive units, finished in red with a black faceplate. Each configuration is suitable for indoor semiflush or indoor surface mounting.

All remote OCP configurations contain a fire control module (FCM) to duplicate basic fire alarm functions at a remote location. Control buttons with LEDs for panel silence, alarm silence, system reset, and drill are furnished. Labels for each control button may be field customised in languages other than English, or to meet on site requirements. A lamp test button is also provided. LEDs for fire alarm, supervisory, fault and isolate annunciation are furnished. A separate LED for power on indication is also provided. In addition, three programmable LEDs are available for annunciation of programmed actions.

The Remote OCP is also available with either an operator display module (ODM) or a 16 indicator module.

The optional ODM provides an 80 character, backlit alpha-numeric, LCD operator display. The LCD provides user defined text messages of event type and precise location. An operator's keypad allows the user to acknowledge events, make inquiries, and view system status. The real time clock and date settings are set and changed from the keypad as well. All control functions are password protected.

Functions available at the ODM include:

- Per point annunciation of alarm and trouble events
- View and acknowledge events which have not been restored to normal
- Force outputs on
- View smoke detector analogue values in % obscuration per foot, and perform sensitivity checks, NFPA 72 requirements
- View event history log
- Isolate zones and points
- Enable Solo test mode
- Enable maintenance mode
- Print status and maintenance reports
- Change smoke detector sensitivity

The optional 16-indicator module provides field configurable LEDs for annunciation by zone, group, device type or point. Since LEDs are bi-coloured (red and yellow), each LED may be configured to annunciate alarm and trouble. Label space is provided with each LED for custom identification.

Features

- LEDs Fire alarm - red
  Supervisory - yellow
  Fault - yellow
  Isolate - yellow
  Power-on - green
- Enable key switch
- Panel silence button and LED - yellow
- Alarm Silence button and LED - yellow
- System reset button and LED - yellow
- Drill button and LED - red
- Three programmable LEDs - yellow
- Lamp Test
- Internal buzzer

Features - *Optional Fire Control Module*

- 7 Sockets which accept red, yellow or green LEDs for special requirements

Features - *Optional Operator Display Module*

- Alphanumeric display
- Numeric touch pad
- No/Delete button
- Scroll up button
- Scroll down button
- Yes/Enter button
- Quit button
- Fast access button

Features - *Optional 16-Indicator Module*

- Zone alarm LEDs - red
- Zone trouble LEDs - yellow

Listings & Approvals

- UL File No. S374
- CSFM No. 7165-1493:147
  7170-1493:167
- MEA 415-92-E, Vol. IX
- FM 3001053

Technical Specification

Operating Temp.: 0 to +50ºC
Operating Humidity: 85% Non-Condensing
Current Draw:

Standby Current:	50mA (FCM)
	32mA (ODM)
	9mA (16-IM)
Alarm Current:	65mA (FCM)
	32mA (ODM)
	34mA (16-IM)

Product Codes

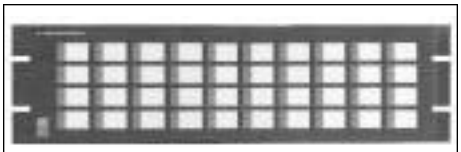
976402
TFX Remote operator control panel with fire control module (FCM) and operator display module (ODM).

976403
TFX Remote operator control panel with fire control module and 16 indicator LED module (FCM/16IND).

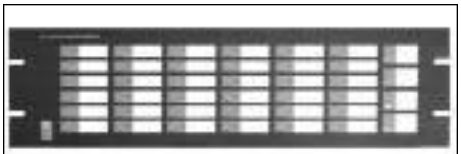
976404
TFX Semi flush backbox for use with all remote operator control panels.

976416
TFX Surface mount backbox for use with any remote operator control panel.

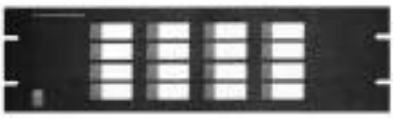
TFX Additional User Interface Module



9976130



9976132



9976134

Product Codes

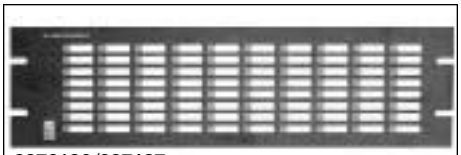
9976130
TFX 40X2 Indicator with MPIM board. Provides an additional 40X2 zone indicators for use with TFX-500M or TFX-800M

9976132
TFX 40 Way status control module and MPIM module for adding to TFX-500M or TFX-800M

9976134
TFX 16 Way status control module with MPIM for use with TFX-500M or TFX-800M

9976136
TFX 80 Indicator module with one integral MPIM card for use on TFX-800M

9976137
TFX 80 Way Indicator module with 2 MPIM modules built in



9976136/997137

TFX Panel Components & Spares

Product Codes

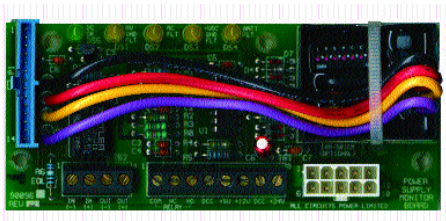
850509
TFX500 & 800M Field wiring guide

940577
TFX/CONSYS Programming cable with DB9 female connector CONSYS software available on document control. Contact Jonathan Gilbert - Product Management, Sunbury or Nick Wright - Technical Services, Walthamstow

976254
TFX Spare keys for use on TFX OCM and door

976262
TFX SIM Serial interface module provides isolation to serial printers

Power Supplies



976122

The AUTOCALL Power supplies (models RPS-424 and DCPM) are solid state electronic power supplies which provide filtered regulated DC power to the AUTOCALL TFX series fire alarm system. The RPS-424 converts 120Va.c. primary power to 24Vd.c., 5Vd.c. and 15Vd.c. The DCPM converts 24Vd.c. power from the RPS-424 to the supply voltages necessary for the TFX family. The power supply monitor module (module 500PSM) monitors the RPS-424 and provides visual trouble indication of faults.

Features - *RPS-424*

. Converts 120Va.c. input power to d.c. operating power
. Charges and supervises batteries
. Automatic transfer to battery during a.c. power failure or brownout
. Unique voltage booster feature for notification purposes

Features - *DCPM*

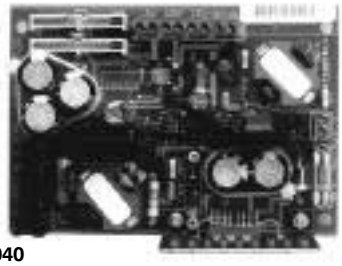
. Converts 24Vd.c. to voltages required by the TFX family

Features - *500PSM*

. Provides visual indicators for RPS-424 power supply faults
. Mounts directly to RPS-424 power supply
. Provides addressable interface to TFX data circuits

Listings & Approvals

. UL 864 Listed, File No. S2561
. CSFM No.:
  7165-1493:147 & 7170-1493:167 (models RPS-424, 500PSM)
  7165-1493:162 (model RPS-424)
  7170-1493:168 (models DCPM, 500 PSM)
. MEA No.: 415-92-E, Vol. VI (models RPS-424, 500PSM and DCPM)
. FM ID No.: OY9A3.AY (models RPS-424, 500PSM)
  OX2A8.AY (model DCPM)



976040

Product Codes

910683
TFX Spare dual voltage RPS-424 power supply/charger used on all TFX panels

976040
TFX DCPM DC/DC convertor for use as a spare or with additional MPIM modules

976122
TFX 500PSM Power supply monitor module

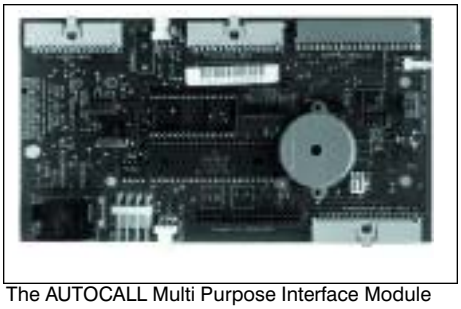
Technical Specification

	RPS-424	500PSM
Dimensions	112.5H x 187.5W x 50D mm	123.5H x 56.25W x 25D mm
Input Voltage	120/240Va.c., 50/60Hz	24Vd.c.
Input Current	1.5A RMS	62mA
Output Circuits (for panel connections only)	+24Vd.c.@4A (non resettable)* +24Vd.c.@2A (resettable)* +15Vd.c.@100mA* +5Vd.c.@4A*	N/A N/A N/A N/A
Output Circuits (for field connections only)	+24Vd.c.@2A (non resettable)* +24Vd.c.@2A (resettable)* N/A	+24Vd.c.@4A +12Vd.c.@100mA +5Vd.c.@4A
Output Voltage	24Vd.c. regulated (+10%/-5%)	N/A
Supervisory Current Draw	100mA (unloaded)	62mA
Alarm Current Draw	100mA (unloaded)	62mA

* Total of output circuits must not exceed 5A alarm, 2.5A supervisory

910683

Multi Purpose Interface Module



The AUTOCALL Multi Purpose Interface Module (MPIM) is the communication interface between the AUTOCALL TFX control panel and certain remote system functions. MPIMs communicate with the main processor module through the system's local or remote (RS485) bus. Each MPIM module is assigned a unique bus address by means of programming jumpers.
The MPIM mounts in the AUTOCALL TFX panel enclosure, a local or remote AUTOCALL TFX display panel enclosure, or a suitable listed enclosure. It connects to the local or remote bus of an AUTOCALL TFX system.

Features
- Remote (RS-485) and local bus communication module
- Interface to annunciators, printers and Input/Output points
- Interface to remote operator display and control panels
- Up to 80 input/output points per MPIM
- Up to 16 MPIMs on the remote bus
- Up to 16 MPIMs on the AUTOCALL TFX-500 series local bus
- Up to 11 MPIMs on the AUTOCALL TFX-800 series local bus
- May be installed up to 4000 feet remotely from panel

Listings & Approvals
- UL Listed; File No. S2561
- CSFM No. 7165-1493:147 7170-1493:167
- MEA No. 415-92-E Vol. VI
- FM ID No. OX2A8.AY

Technical Specification

Dimensions:	165H x 91W x 25D mm
Operating Temp.:	0°C to +50°C
Operating Humidity:	85% (Non Condensing)
Operating Voltage:	+5Vd.c., +12Vd.c., -12Vd.c.
Operating Current:	
Normal:	19mA
Alarm:	24mA

Maximum distance from MP-500 (Main Processor Board):

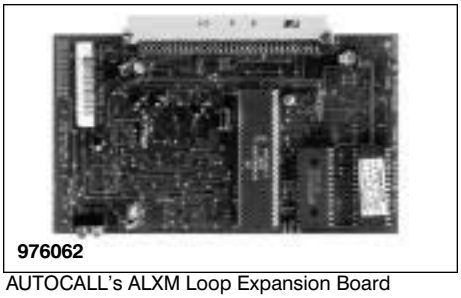
Local Bus:	60cm
Remote Bus:	2500m

Communications Method:

Local Bus:	Synchronous 1 MBit/sec
Remote Bus:	RS485, 4800 baud
Expansion Bus:	Mulitplexed
Serial Port:	RS232, 4800 Baud

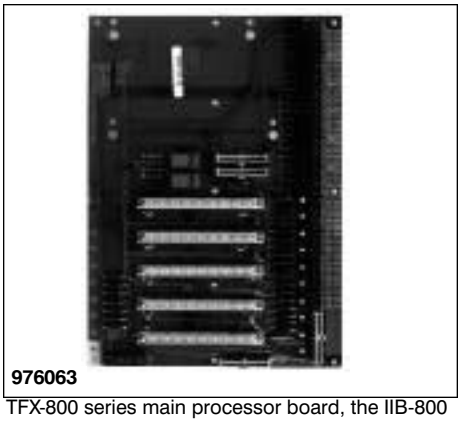
Product Code
976015
TFX-MPIM Multi purpose interface module for driving additional LED indicators, status control modules, I/O expansion and printers. Refer to manual for limitations

Loop Expansion Board



976062

AUTOCALL's ALXM Loop Expansion Board (model IIB-800) is used to expand the capacity of the AUTOCALL TFX-800 system. Each board provides two signalling line circuits, each with a capacity of 99 addressable analogue devices, such as smoke detectors, water flow switches, pull stations and supervisory devices. Up to 5 IIB-800 boards may be installed in an AUTOCALL TFX series system, for a total of 990 devices.
The IIB-800 is an intelligent module. It has its own microprocessor and uses distributed processing techniques for signal processing and analysis. On board non-volatile memory stores the addresses of the devices on each of the two signalling line circuits. In the event of a failure of the AUTOCALL



976063

TFX-800 series main processor board, the IIB-800 is capable of operating indicating appliance modules on the same signalling circuit in which an alarm has occurred, and will signal a common alarm or trouble condition by operating common alarm and trouble relays on the IAM-800 Expansion Motherboard.

Features
- Two signalling line circuits
- 99 Addressable analogue devices per circuit
- Degrade mode operation in the event of main processor board failure

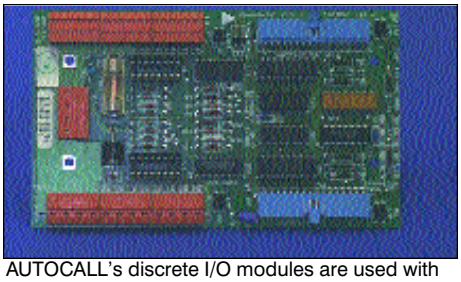
Listings & Approvals
- UL File No. S2561
- CSFM No. 7165-1493:147 7170-1493:167
- NY MEA No. 415-92-E, Vol. II
- FM ID No. JI OX2A8.AY

Technical Specification

Dimensions:	216H x 153W x 12.5D mm
Operating Temp.:	0 to +50°C
Operating Humidity:	85% Non-Condensing
Input voltage:	5Vd.c., 24Vd.c. (from IAM-800)
Operating Current:	50mA

Product Codes
976062
TFX IIB-800 Two loop addressable expansion module for use as a spare or expanding the TFX-800M to a maximum of 10 loops
976063
TFX IAM-800 Additional/spare motherboard for TFX-800M

Discrete I/O Modules



AUTOCALL's discrete I/O modules are used with the AUTOCALL TFX series systems. The modules include the following model numbers: IAA-16 (XIOM 16 Input Module)), OAA-16 (XIOM 16 Output Module), OMA-80 (Custom Graphic Driver Board) and the XAA-16 (8 Input/8 Output Contact Monitor/Relay Driver Module - XIOM).
The IAA-16 XIOM 16 Input Module is used to interface with normally open contact devices such as HVAC fan controls and speaker zone select switches.
The OAA-16 and the OMA-80 modules are used in AUTOCALL TFX series systems to annunciate events by a single device or by user defined groups or zones. They are typically installed in a custom graphic or zonal annunciator and wired to indicating LEDs. The input events which relate to the LED outputs are completely field programmable.
These inputs may be alarms, supervisory conditions, general trouble conditions, special trouble conditions such as missing devices or AC power failure, and non-alarm/non-trouble inputs. The XAA-16 provides 8 inputs/8 outputs. Outputs are rated for 6mA at 24Vd.c. (suitable for relays and other 24Vd.c. devices). Total current of all 8 outputs must not exceed 500mA.

Features
- 16 Contact closure inputs (IAA-16)
- Programmable LED driver outputs (OAA-16 and OMA-80)
- 8 Contact closure inputs and 8 programmable outputs
- LED Outputs user configurable for annunciation by zone, point or user-defined group
- 4 System condition LED driver outputs
- Up to 4000 feet (2500m) remote from panel

Listings & Approvals
- UL File No. S2561, all models 1/A

IAA-16
- CSFM No. 7165-1493:147
- NY MEA No. 415-92-E, Vol. VI
- FM ID No. JI OX2A8.AY

OAA-16
- CSFM No. 7165-1493:147
- NY MEA No. 415-92-E, Vol VI
- FM ID No. JI OX2A8.AY

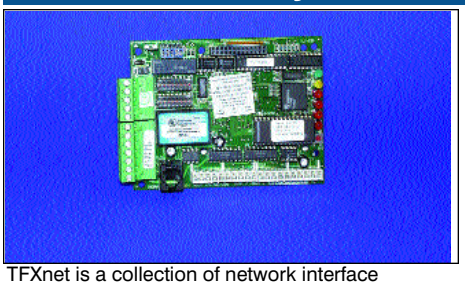
OMA-80
- CSFM No. 7300-1493:152
- NY MEA No. 415-92-E, Vol. VI

Product Codes
976067
TFX IAA-16 Digital input expansion board for use with MPIM
976066
TFX OAA-16 Digital output expansion unit for use with MPIM
976077
TFX OMA-80 Mimic driver PCB for use with MPIM
976098
TFX XAA-16 8 Input and 8 output expansion board for use with MPIM

Technical Specification

	IAA-16	OAA-16	OMA-80	XAA-16
Dimensions	141H x 84W x 18.5D mm	141H x 84W x 18.5D mm	231H x 188W x 12.5D mm	141H x 84W x 18.5D mm
Operating Temperature	0 to +50ºC	0 to +50ºC	0 to +50ºC	0 to +50ºC
Operating Humidity	85% Non-Condensing	85% Non-Condensing	85% Non-Condensing	85% Non-Condensing
Input Voltage from MPIM	5Vd.c.	5Vd.c.	5Vd.c.	5Vd.c.
Input Current	11mA plus 5mA (per active input)	11mA plus 10mA (per active output)	11mA plus 10mA (per active input)	9mA plus 5mA (per configured input plus 50mA per active o/p)
Output Current per LED	-	10mA	10mA	-
Output Current per output (not current limited)	-	-	-	100mA

TFX Fire Alarm System Network



TFXnet is a collection of network interface modules and peripheral equipment that together form a robust, fault resilient and flexible peer-to-peer communications network.

Operation

TFXnet employs a token passing communications protocol that treats each node equally. Loss of one or more nodes does not affect operation of the remainder of the network. The network will automatically re-configure when a node is inserted or removed.

Data is regenerated at each node with a minimum delay (1/2 bit time). This provides maximum distance between nodes and isolation of signalling circuits between nodes without impacting data throughput. Isolation ensures that a short/open condition on a circuit between any two nodes does not affect other circuits.

In the event that groups of nodes are isolated from the remainder of the network, due to one or more circuit faults, each group will automatically re-configure communications and continue to inter-operate. When the fault condition is restored, the network will re-configure and total communications will commence.

Features

- Half duplex, token passing protocol
- Peer-to-peer operation
- Automatic fault recovery
- Field configured baud rates up to 38.4K baud
- Asynchronous, 1 stop bit, 8 data bits, no parity
- Deterministic performance
- Self-configuring
- Error detection and recovery
- Short circuit isolation at each node
- Open/short circuit detection identifies the location of the fault
- Nodes automatically disconnect from the network at loss of power and when experiencing a catastrophic failure

Features - *TFXnet Communications*

- True peer-to-peer communications, no host or master controller
- Node failure does not affect remainder of network
- Groups of nodes isolated due to circuit faults continue to communicate within the group
- Supported communication media - combinations of fibre optic, twisted/shielded pair and twisted/unshielded pair
- Supported topologies - combinations of star, bus and ring connections
- Token passing non collision (deterministic) communications protocol
- Plug-in module (model TLI-530) connects equipment anywhere on the network

Features - *TFX Panel Operation*

- Up to 62 AUTOCALL TFX Series fire panels connect to a single TFXnet network; Supports up to 61,380 analogue addressable points; 4960 zones; over 7000 digital I/O points
- Panels maintain full stand-alone functionality
- Each panel can be configured to respond to events from all or any other sub-set (referred to as sub-net) of other panels
- Up to 3 panels can be configured to provide full system annunciation, control and logging; configuring two panels as identical receiving units provides hot-backup of central monitoring equipment
- 'Virtual Front Panel' (VFP) feature allows operator interrogation and control of any panel from any other panel
- All TFX-500 and TFX-800 features and capabilities are retained
- TFX Panels can be configured with integrated single and multiple channel voice and audio evacuation equipment as well as integrated addressable firefighters telephone system

Features - *Optional Equipment*

- PC Based graphical user interface (Firegraph) connects directly to the TFX network

Listings & Approvals

- Rind and redundant path star topologies meet NFPA 72 Class A, Style 7 signalling circuit standards
- Bus and single path star topologies meet NFPA 72 Class B, Style 4 signalling circuit standards
- All equipment is UL listed (864) (UOJZ) for NFPA 72 local, auxiliary, remote and propriety signalling services (UL File No. S2561)
- CSFM No. 7170-1493:167
- MEA No. 415-92-E, Vol. VI

Product Codes

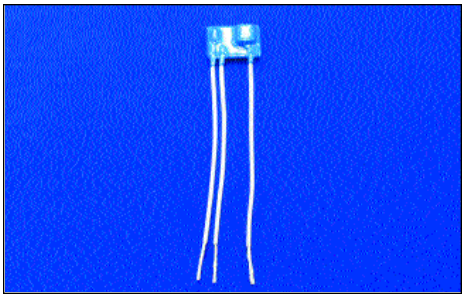
976165

TLI-530 Module kit for use on TFX-Net only

976166

TLO-530 Board kit for use with TFX-Net

End of Line Assembly



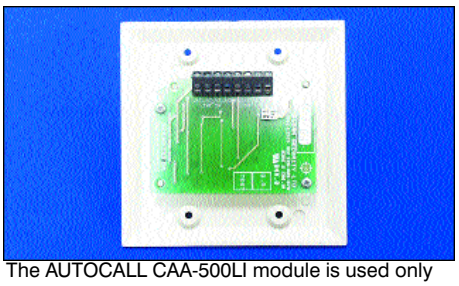
This unit is used with alarm signal circuits of main processor.

Product Code

976016

TFX IAS-500 End of line (EOL) assembly

AUTOCALL CAA-500LI Module



The AUTOCALL CAA-500LI module is used only with the AUTOCALL TFX fire control panels to detect and isolate short circuits. This module should be installed between groups of addressable devices to prevent failure of the entire signalling circuit loop in the event of a short circuit. Upon detection of a short circuit, this module opens up the positive leg of the signalling circuit. On a Style 6 circuit, this causes a shorted section between two CAA-500LI modules to be isolated from the rest of the loop. The AUTOCALL TFX panel indicates which devices in the loop have been isolated, to assist in locating and correcting the short circuit condition. Once the short circuit has been cleared, the CAA-500LI automatically resets, and communication with the isolated devices is restored.

Features

- Isolates short circuits on signalling circuit to prevent failure of entire circuit
- Automatically resets on correction of short circuit
- Status LED indicates short circuit detection
- No external power required
- High EMF/RFI noise immunity
- May be configured to meet NFPA style 7 requirements

Listings & Approvals

- UL File Number S374
- CSFM No. 7300-1493:152
- MEA No. 415-92-E Vol. VI
- FM ID No. OX2A8.AY

Technical Specification

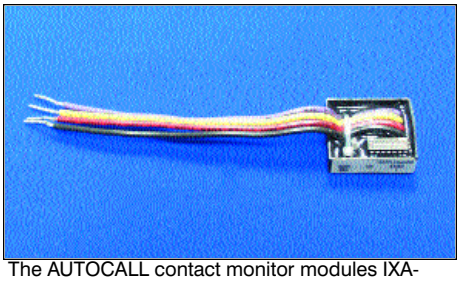
Dimensions: 112.5H x 112.5W x 25D mm
Operating Temp.: 0ºC to 50ºC
Operating Humidity: 85% (Non Condensing)
Operating Voltage: 28Vd.c. maximum
Signalling Circuit Current:
Standby Current: 0.7mA
Alarm Current: 0.7mA
Cover Material: Polycarbonate ABS Alloy

Product Code

976026

TFX CAA-500LI Line isolator module complete with 2 gang mounting plate

Addressable Contact Monitor Modules



The AUTOCALL contact monitor modules IXA-500CMA (Style B & D)and IXA-501CM (mini module) provide an initiating zone suitable for contact devices such as pull stations, waterflow switches and sprinkler supervisory devices. Each module reports and input from any contact device in its zone as a single address to the AUTOCALL TFX series systems.
Each contact monitor module uses one of 126 available addresses on an AUTOCALL TFX signalling circuit. It responds to regular polls from the control panel and reports its type and the status of its initiating circuit. The LED latches steady on alarm.
These modules may be programmed to report inputs as either alarm or supervisory conditions. Another programming option invokes a special polling interrupt routing, resulting in quicker alarm response than systems which rely on simple polling techniques to detect an alarm.

IXA-500CMA

The IXA-500CMA provides a Style B or D initiating circuit and mounts on a standard 2-gang electrical box. An attractive plastic cover with eggshell finish is included. An LED is visible through an opening in the plastic cover and illuminates steadily during alarm.
The IXA-500CMA may be programmed to monitor normally open or normally closed contact devices.

IXA-501CM

The IXA-501CM mini module provides a Style B initiating circuit. Its compact size makes it ideal for placement inside a standard electrical box behind the monitored contact device, such as a pullstation.

Features

- Supervises and monitors dry contact devices
- Normally open and normally closed programmable options (IXA-500CMA)
- IXA-501CM Fits inside standard electrical box
- IXA-500CMA Mounts on standard 2 gang electrical box
- High EMF/RFI noise immunity
- Powered directly by signalling circuit (no additional power required)
- Programmable for normal or fast (polling interrupt) alarm reporting

Listings & Approvals

- UL File No. S374
- CSFM No. 7300-1493:152
- MEA No. 415-92-E Vol. VI
- FM ID No. OX2A8.AY

Product Codes

976081

TFX IXA-501CM Addressable mini contact module

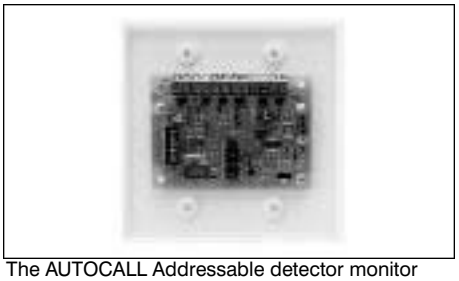
976092

TFX IXA-500CMA Addressable contact module complete with US double gang mounting plate

Technical Specification

	IXA-500CMA	IXA-501CM
Dimensions	122.5H x 122.5W x 25D mm	37.5H x 35W x 12.5D mm
Operating Temperature	0ºC to 50ºC	0ºC to 50ºC
Operating Humidity	85% (Non condensing)	85% (Non condensing)
Operating Voltage	28Vd.c.	28Vd.c.
Signalling Circuit Current:		
Standby Current	0.18mA maximum	0.18mA maximum
Alarm Current	0.18mA maximum	0.18mA maximum
Initiating Circuit Wiring Resistance	10 Ohms maximum	10 Ohms maximum
Cover Material	Polycarbonate ABS Alloy	N/A

Addressable Detector Monitor Module



The AUTOCALL Addressable detector monitor module IXA-500DMA, provides an initiating zone suitable for compatible two wire smoke and heat detectors. Each module reports an input from any detector in its initiating circuit as a single address to the AUTOCALL TFX series system. Up to 20 detectors can be connected to the initiating circuit, depending on the specific detectors used. Each detector monitor module uses one of 126 available addresses on an AUTOCALL TFX signalling circuit. It responds to regular polls from the control panel and reports its type and the state of its initiating circuit. This module contains bi-coloured LEDs (red for alarm and yellow for fault).

Features

- Supervises and monitors two wire smoke and heat detectors
- Supervises 24Vd.c. detector power on two wire loop
- Resets detectors on command from control panel
- Style B and D initiating circuits
- Contains Bi-coloured LEDs to display alarm/ fault status
- High EMF/RFI noise immunity

Listings & Approvals

- UL File No. S374
- CSFM No. 7300-1493:152
- MEA No. 415-92-E, Vol. 6
- FM ID No. OX2A8.AY

Technical Specification

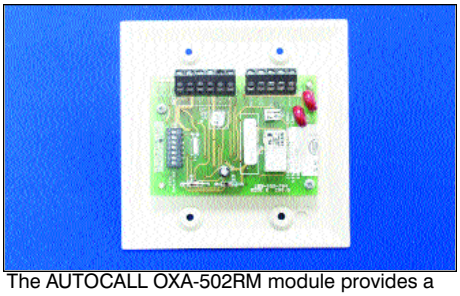
Dimensions: 112.5H x 112.5W x 25D mm
Operating Temp.: 0 to +50ºC
Operating Humidity: 85% Non-Condensing
Operating Voltage:
Signalling Circuit: 28Vd.c. Max.
External Power: 24Vd.c.
Signalling Circuit Current:
Stand-by Current: 0.18mA
Alarm Current: 0.18mA
External 24Vd.c. Power:
Stand-by Current: 18mA
Trouble Current: 26mA
Alarm Current: 74mA Max.
Initiating Current Voltage: 16.9 to 22.2Vd.c.
Initiating Circuit Ripple Voltage: 500mV p-p Max.
Initiating Circuit Wiring Resistance: 25 Ohms
Cover Material: Polycarbonate ABS Alloy

Product Code

976093

TFX IXA-500DMA Addressable detector zone interface module complete with double gang. US mounting plate

OXA-502RM - Addressable Relay Module



The AUTOCALL OXA-502RM module provides a form C relay contact for annunciation and auxiliary control purposes with the AUTOCALL TFX series fire alarm system. Both are monitored and controlled as an addressable device on an AUTOCALL TFX system signalling line circuit. The relay contact may be programmed to operate in conjunction with any single or group of input events.

Each relay monitor module uses one of 126 available addresses on the AUTOCALL TFX signalling circuit. It responds to regular polls from the control panel and reports its type and status. A flashing LED indicates that the module is in communication with the control panel. Up to 99 modules can be placed on an individual circuit. The OXA-502RM is an addressable field module and is provided with an attractive plastic cover with eggshell finish. The status LED is visible through the plastic cover.

Features

- Provides one Form C programmable relay contact
- Monitored and controlled from a signalling line circuit (addressable loop)
- Powered by signalling line circuit. No external power
- LED indicates relay operation
- High EMF/RFI noise immunity

Listings & Approvals

- UL Listed: File No. S2561
- CSFM No. 7300-1493:152
- MEA No. 415-92-E Vol. VI
- FM ID No. OB2A9.AY

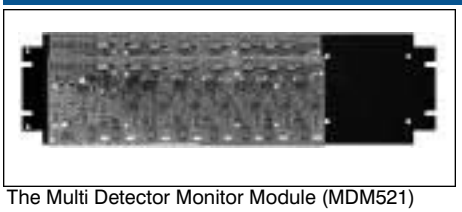
Technical Specification

Dimensions: 113H x 113W x 33D mm
Operating Temp.: 0ºC to +50ºC
Operating Humidity: 85% (Non Condensing)
Relay Contact Rating: 2A @ 24Vd.c, 0.6A @ 120Va.c.
Addressable Loop Current:
Standby Current: 0.18mA
Alarm Current: 0.18mA
Cover Material: Polycarbonate ABS alloy

Product Code

976258
TFX OXA-502RM Addressable relay module complete with US double gang mounting plate

Multi Detector Monitor Module



The Multi Detector Monitor Module (MDM521) connects zones of conventional 24Vd.c. detectors and interfaces them to the AUTOCALL TFX series fire alarm system. The MDM521 provides eight Style B, Class B zones.
The Multi Detector Monitor Module fully monitors each initiating circuit of conventional 24Vd.c. detectors and signals the control panel upon alarm, open circuit fault, or power supply fault. Each zone reports as a single address to the AUTOCALL TFX series control panel, however, the detectors in these conventional zones are not individually addressable.
The module is compatible with 2-wire or 4-wire, UL listed, low voltage, conventional, point type detectors or normally open contact initiating devices. Up to 30 detectors may be connected to each initiating circuit, depending upon the specific detector used.
Each zone on the MDM521 has a latching, red LED to provide indication of an alarm condition. Resettable 24Vd.c. is provided for using four wire detectors.

Features

- Supervises and monitors two-wire or 4-wire smoke detectors
- Resets detectors on command from control panel
- Eight Style B initiating circuits
- Contains LEDs to display alarm status

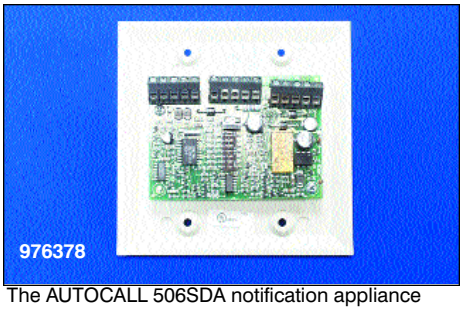
Listings & Approvals

- UL Listed; File No. S2561
- CSFM No. 7165-1493:147
  7170-1493:167
  7300-1493:152
- MEA No. 415-92-E, Vol. IX

Product Code

976375
TFX MDM/521 Addressable multi way conventional detection zone interface for 1-8 zones

Notification Appliance Module



The AUTOCALL 506SDA notification appliance modules is used to activate notification appliances in response to a command sent from the fire control panel.
The 506SDA works in conjunction with the AUTOCALL TFX series fire alarm system, and CONSYS Issue 3.0 and above.
The notification appliance circuit is supervised and may be configured as an NFPA 72 Style Z or Style Y circuit. The AUTOCALL 506SDA may be powered from either an audio source or a separate power supply that is UL listed for fire signalling applications.
When the 506SDA is used with the UL listed RPS-424 power supply (**910683**), or any other power limited input source that is UL listed for fire signalling applications, the output is power limited.
The 506SDA will not operate into a short circuit fault condition. This ensures the operation of all other devices during an alarm condition including other 506SDAs.
The 506SDA is an addressable field module and is provided with an attractive plastic cover with egg-shell finish. An LED is visible through an opening in the plastic cover.

Features

- Provides a Style Y or Style Z, audio or d.c., notification appliance circuit
- LED annunciation at each device for normal, activated and trouble conditions
- Supervises 24Vd.c. appliance power without the need for a supervisory relay
- 2 Amp output rating
- Silenceable and non-silenceable operation
- High EMF/RFI noise immunity
- Will not operate into a short circuit fault
- Plug-in power limiting option

Listing & Approvals

- UL Category UOXX, File No. S374
- CSFM No. 7165-1493:147
  7300-1493:152
  7170-1493:167
- MEA No. 415-92-E Vol. XI

Technical Specification

Dimensions: 112.5H x 112.5W x 31D mm
Operating Temp.: 0 to +50ºC
Operating Humidity: 85% Non-Condensing
Notification Circuit Rating:
2.0Amp Max., 24Vd.c.
50 Watts, 25VRMS audio
50 Watts, 70VRMS audio

Addressable Loop Current:
Standby Current: 0.35mA
Alarm Current: 0.35mA
External 24Vd.c. Power: Any UL listed supply, compatible with the connected notification appliances
Standby Current: 0.08mA
Alarm Current: 0.08mA
(Plus current used by connected notification appliances)
Cover Material: Polycarbonate ABS Alloy

Product Codes

976378
TFX 506SDA Addressable sounder/notification device output module complete with US double gang mounting plate. Used for switching sounder and speaker circuits
976250
Spare TFX 27K 1W Resistors for use with 505/6SDA
910683
TFX Spare dual voltage RPS-424 power supply/charger used on all TFX panels

Pullstations & Ancillaries

The RMS series of manual pull stations are of high quality non-toxic die-cast construction.
Low profile and smooth edges offer an attractive yet functional design. All components are pre-painted or have plated surfaces to inhibit corrosion.
The RMS series of manual pullstations have a 10 amp snap action switch. They can be used with or without a break glass rod for positive indication that the unit has been operated.

Hazardous Locations
The RMS series of pull stations are constructed of high strength metal die cast alloy.
The UL rating of Class I Group B (Hydrogen) C & D, Class II Groups E, F, G, Class III and outdoor rating of type 4X, allows these stations to offer unmatched placement flexibility. The terminal block connections, D.P.D.T contacts @ 10 amps meet most electrical requirements.
Having a 'conventional' pull station design the RMS series stations offer easy identification.

Features
. Die cast metal construction
. Low profile functional design
. Dual action option
. Institutional (Key operated) option
. Explosion proof option
. Break glass option
. Weatherproof option
. Hex screw or key lock reset options
. UL Listed

Technical Specification

Dimensions:	118H x 83W x 37D mm (RMS-1T)
Weight:	560g (RMS-1T)
Contact:	Single pole, single throw (double pole, single throw optional)
Contact Rating:	10 Amps @ 125/250Va.c.
Wire AWG:	12 to 22 AWG
Wiring:	Terminal block connections (6-32 w/sem plate)
Switch:	10 Amp @ 120Va.c.
Key Switch:	(pre-signal) 0.5 Amp 30Vd.c.

Product Code
960673
TFX RMS-1T Single action non addressable pull station

Addressable Manual Stations

The AUTOCALL IXA-RMS series of manual pullstations are of high quality, non toxic, diecast construction and connect directly to the AUTOCALL TFX system. Using one of 126 available addresses on the loop, each station responds to regular polls from the control panel and reports its type and status.
Low profile and smooth edges offer an attractive yet functional design. All components are pre painted or have plated surfaces to inhibit corrosion.
The RMS series of manual pull stations have a 10A snap action switch. All stations can be used with or without a breakglass rod (included) for positive indication that the unit has been operated.
Programming with CONSYS allows an addressable manual station to be automatically programmed for "fast response" that invokes a special polling interrupt routine. This results in a one second alarm response. Systems which rely on simple polling techniques to detect an alarm can take longer to report manual alarms.

Features
. Die cast metal construction
. Low profile functional design
. Terminals for field wiring
. Powered directly by signalling circuit (no additional power required)
. Programmable for normal or fast alarm reporting
. Optional dual action
. Optional break glass
. Optional hex screw or key lock reset

Listings & Approvals
. UL Listed; File No. S165
. CSFM No. 7150-1493-156

Technical Specification

Dimensions:	118.75H x 80W x 22D mm
Wire AWG:	12 to 22 AWG
Wiring:	Terminal block connections

Product Codes
976277
TFX IXA-RMS Addressable indoor pullstation for use on TFX panels
960687
TFX Surface mount backbox for use with RMS pullstations
960684
TFX Spare glass rod for use with RMS pullstations

Notification Appliances - Motor Types

508722

These alarm bells are ideal warning devices for schools, stores, public buildings and any other location with low to moderate ambient noise levels. These alarm bells are completely enclosed in an aluminium die cast housing with red enamelled steel gongs. These alarm bells can be mounted in standard outlet boxes or 4" x 4" junction boxes. All are specifically designed for use with fire alarm systems and are UL listed.

UL Spherical dB Measurement
Sound level measurements are made in accordance with UL Test Standard 464. The audible device is wall mounted in a reverberant room and sound power output is measured at various points along a 10' radium from the wall (i.e. the spherical dB measurement represents an average of several readings taken along a 180 arc, 10 feet from the bell).

Indoor Measurement
Sound level in the indoor installation may vary depending upon room size and acoustical loading.

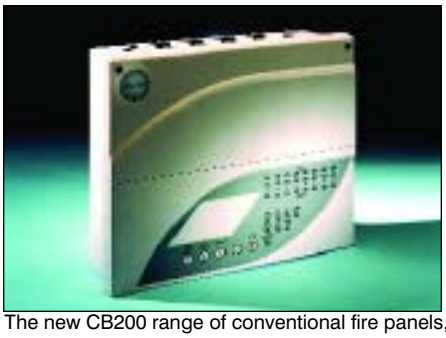
Product Code
508722
K-MP-6P 6" UL Bell 30mA 85dB

Technical Specification

Product Code	Vibrating Type Rated Voltage Polarised	Size (Inches)	Rated Current	Starting Voltage	UL Spherical dB Measurement	Indoor Measurement
508722	24Vd.c.	6	0.03A	12V	84	86-89

Conventional Fire Alarm Panels - BS5839 and EN54

CB200 (Conventional Control Panel)



The new CB200 range of conventional fire panels, are low cost - high quality panels which provide an excellent product solution to meet the differing needs of today's diversified marketplace.

The slimline CB200 is specifically intended for use on simpler, low cost fire alarm installations where it currently holds a dominant market position.

The CB200 high quality - low cost conventional panel range is housed in a compact aesthetically appealing polycarbonate enclosure designed for versatility hence allowing for surface or semi-flush mounting.

Each panel in this series is"simple to install, program and operate", as reported by satisfied installation engineers and critical end-users.

A comprehensive range of technically detailed, support documentation relating to commissioning, operating, maintenance and fault finding is easily available if required.

Technical Information

The CB 200 conventional fire panel may be supplied in 1 or 2 zone format. All zones and alarm circuits are monitored for open and short circuit fault conditions with detector removal facility provided as standard. The cabinet will house 2 x 12V 2.1 Ah S.L.A batteries wired in series.
Comprehensive user controls, including the ability to isolate each zone, assist in the prevention of unwanted alarms during periods of building maintenance or refurbishment. A slide-in insert is included for clear zone identification.

The electronics motherboard has been designed using the latest technology, thus providing maximum reliability in a compact format.

The cabinet back-box houses only the transformer, thus providing a virtually empty enclosure for first fix installation. A steel gland plate, removable plastic grommets and ample space are designed to assist with cable termination. The surface-mount electronics motherboard is fitted and terminated after the first fix installation and finally a terminal cover completes the panel installation.

Panels are boxed complete with a three-sticker set allowing user selection and application on site.

CB200 Panel Enhancements
The CB200 panel may be enhanced to provide additional facilities.

The C1437 alarm module provides the facility to split and control one alarm input into four independent, fully monitored alarm output circuits. The C1437 has open & short circuit fault monitoring on all alarm circuits (complete with LED indication). Connection between the panel and the C1437 board is monitored for open and short circuit faults.

Note
If panel enhancements are required, the enhancement boards must be ordered complete with suitable enhancement enclosure and panel. Enhancement boards and enclosures cannot be ordered as individual component items.

Features

- Built-in detector removal indication facility
- Available in 1 or 2 zone format
- One-man test facility
- Removable cable entry grommets
- Compact and stylish design
- Surface or Semi-Flush Mounting
- User friendly controls
- Ample termination space
- Poly carbonate enclosure
- Supplied with log book/manual
- Complies with EMC and LVD Directives

Panel Dimensions

Height: 245 mm
Width: 313 mm
Depth: 92 mm

Product Codes

2500/021 CB200 1 zone conventional control panel, CE Marked, space for 2Ah battery set (2 x 12V)

2500/022 CB200 2 zone conventional control panel, CE Marked, space for 2 Ah battery set (2 x 12V)

Panel Enhancement Boards
2500/032 C1437 4 way alarm extender board.
2500/034 C1466 1 x double pole relay board (1A contacts - PCB only)

Enhancement Enclosures
2500/220 Enclosure c/w 1A PSU & space for 4 x C1437 and 2 x C1466 & 6.2AH battery set. Cabinet size - 380H x 600W x 210D mm.

2500/221 Enclosure c/w 3A PSU & space for 2 x C1324 or 4 x C1437 boards. Cabinet size - 380H x 600W x 210D mm.

2500/222 Enclosure c/w 5A PSU & space for 2 x C1324 or 4 x C1437 boards. Cabinet size - 380H x 600W x 210D mm.

System 1700 (Conventional Control Panel)

A uniquely flexible series of basic fire controllers. Covering 4 or more zones of fire detection and suitable for cost effective protection in a wide range of building types. Detection, display, alarm, and extinguishing control, can be tailored to meet any need.

Technical Information

System 1700 consists of a number of standard modules, selectively assembled in one of 5 housings which can be flush mounted using the appropriate kit - to meet any specific customer requirement within the designed capacity. These units can be configured to provide fire detection with local display, remote display, extinguishing control or any combination of these functions with integral power units and secondary batteries or from separate 24Vd.c. power supplies. Alarm sounder outputs can be commissioned or pre-programmed for specific building sectors.

Conventional style monitored detector zones, each consisting of up to 20 standard smoke, heat detectors or callpoints.

Remote display or control are driven by a multiplex transmitter/receiver system on a single pair cable. Each transmitter can feed up to 4 receivers, at a distance of up to 1Km. Display legends are replaceable. Standard legend is English or on the reverse Arabic/English, but blanks are available to suit other customer requirements.

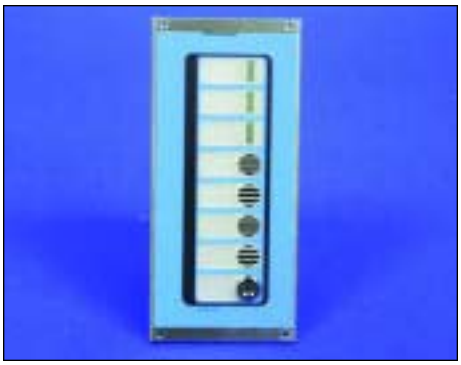
Features

- Expandable in four zone increments
- Customised by module selection - uniquely flexible
- Integral battery and charger
- Simple controls
- Local and remote displays
- Easy installation and extension
- Selective sounder operation
- All circuits fault monitored
- Remote signalling output
- Designed for fire alarm systems specified to BS5839: Part 1:1988
- Proven exceptionally reliable world-wide

*Datasheet - Product Code **PSF41** "System 1700 Conventional Fire Controller"*

Manual - 02A-02-D1 "Fire Detection Manual"

Alarm Module with Display



The Alarm Module with Display is the central control unit driving the sounders and auxiliaries. The display indicates Power On, Fire or Fault, and has push-button switches for Evacuate, Silence, Reset and Lamp Test enabled by a key-switch. The module also has an integral fire/fault sounder.

Product Codes

508.014.020

1700 Alarm PCB & Display (see picture)

508.014.050

1700 Alarm Unit Display Dutch TNO

508.014.055

System 1700 Spare Key

Integral Power Modules

There are two versions available:- 1.5A or 3.0A suitable for powering the system and recharging integral sealed lead-acid batteries. The power modules are available to suit 110Va.c. or 240Va.c. mains supply.

Product Codes

508.014.032

1700 1.5 Amp 240V PSU

508.014.033

1700 3 Amp 240V PSU

508.014.036

1700 1.5 Amp 115V PSU

508.014.037

1700 3 Amp 115V PSU

External Power Interface Module

Fitted internally this module monitors a suitable 24Vd.c. supply. The module monitors the external power supply for any fault condition signalled. The module should be used with an external power supply when Nickel-Cadmium batteries are specified.

Product Code

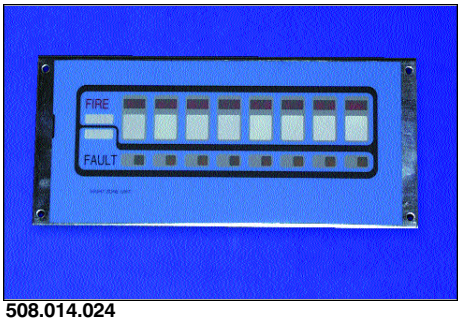
508.014.031

1700 External Power Interface PCB

Four or Eight Zone Module with Display

508.014.023

1700 4 Zone PCB & Display



508.014.024

1700 8 Zone PCB & Display

This module provides the power to each detection zone which respond to four conditions, open-circuit fault, quiescent, alarm or short-circuit fault. Individual indication is given for either Alarm or Fault. Each zone has a corresponding output which is energised in an alarm condition and is suitable for driving zonal relays and/or auxiliary modules i.e. multiplexed repeater.

Relay Module

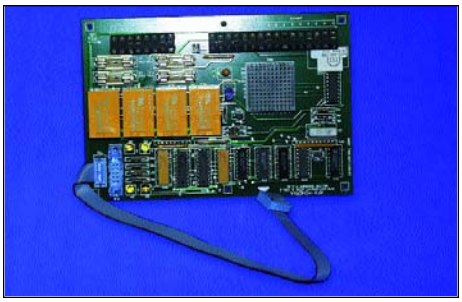
Mounted internally this module has 4 heavy duty relays each with a single changeover contact (rated 5A @ 30Vd.c.). The relays are normally energised from the individual zone outputs of the zone module.

Product Code

508.014.028

1700 Relay PCB

Sector Sounder Module



This module allows up to 4 groups of sounders to be activated in a pre-programmed response from up to 10 zones of detection. Each group can be programmed to respond in either pulsing or continuous output. Each output is fused at 1A @24Vd.c.

Product Code

508.014.026

1700 Sector Sounder PCB

Sounder Booster Module

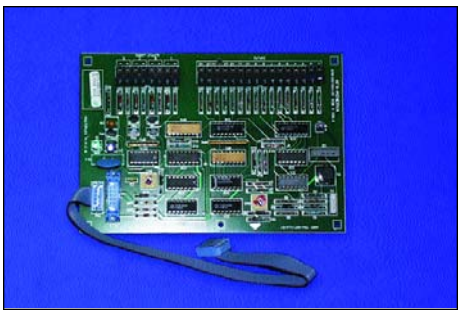
This module allows for extra power to be supplied to a sounder circuit. It is normally used when large numbers of sounders are required in one circuit or where long distances create volt-drop problems. Additional current is 1.5A.

Product Code

508.014.027

1700 Sounder Extension PCB

Multiplex Transmitter Module



This module transmits up to 16 independent signals plus common alarm or fault to up to 4 multiplex receiver modules at remote locations over a pair of signal wires (max. length 1 Km).

Product Code

508.014.029

1700 Multiplex TX PCB

Multiplex Receiver Module

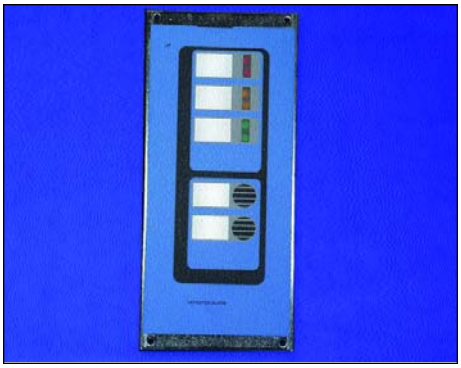
This module receives and encodes the signals from a multiplex transmitter module. The outputs can be used to drive either a Repeater display module, Mimic indicators etc.

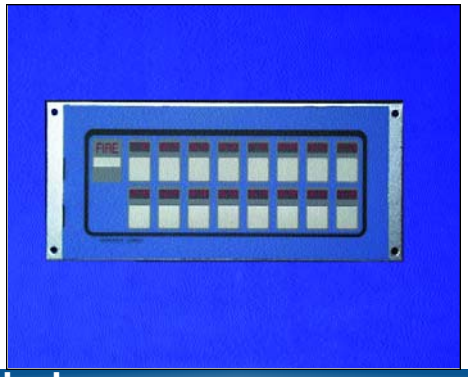
Product Code

508.014.030

1700 Multiplex RX PCB

Repeater Display Module





These modules display the information from the Multiplex receiver module. The Remote Alarm display provides indication of Fire, Fault, and Power On together with Silence and Lamp Test facilities. The Repeater Display module provides up to 16 Fire indications.

Product Codes

508.014.021

1700 Alarm Repeater Display

508.014.022

1700 16 Zone Repeater Display

Extinguishing Module and Display

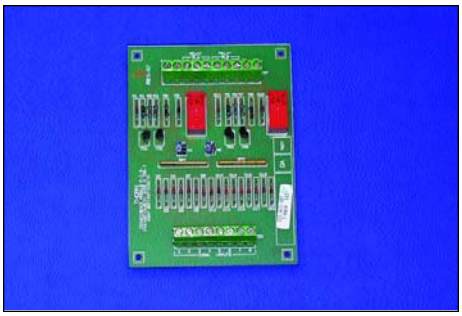
This module provides for complete control of a gaseous extinguishing system. The input commands are taken from the coincident zonal outputs. The module also has an independent Manual Release facility and has indicators for Manual-Automatic mode, Gas Released and Disabled conditions together with a key switch for mode selection. The module has facilities for extensive electrical fault monitoring, cylinder pressure monitoring, and an adjustable time-delay before gas release.

Product Code

508.014.056

1700 Extinguishing Control PCB and Display

Coincidence Module



This module is designed to activate one or both relays in response to an alarm condition from up to eight zonal outputs. This module is primarily used in conjunction with the extinguishing module, but may also be used for other applications.

Product Code

508.014.048

1700 Coincidence Module PCB

Housings

Technical Specification

ADT	Thorn	Housing	Dimensions (mm) Height	Width	Depth	Weight (Kg)	Display Capacity	Module Space
508.014.011.A	**508.014.011.T**	2 Aperture	354	336	133	5	2H	2
508.014.013.A	**508.014.013.T**	3 Aperture	354	420	193	7	1V + 2H	4
508.014.015.A	**508.014.015.T**	5 Aperture	354	637	193	9.5	1V + 4H	6
508.014.039.A	**508.014.039.T**	8 Aperture	760	531	233	14.5	8H	10

H = Horizontal V= Vertical

As standard the System 1700 enclosures are available with Thorn or ADT Branding. A bezel kit is available for flush mounting the panels

Product Codes

508.014.047

1700 Installation Kit For 3 Aperture Housing

508.014.038

1700 Installation Kit For 5 Aperture Housing

Housing Accessories

508.014.019

1700 Aperture Blanking Plate

508.014.035

1700 Custom Legend Strips, Blank System

1700 Battery Clamp Kits

508.014.053

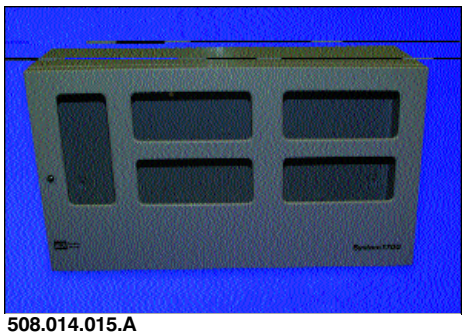
1700 Battery Clamp Kit For 10Ah Batteries

508.014.011.A

1700 2 Aperture

508.014.013.A

1700 3 Aperture



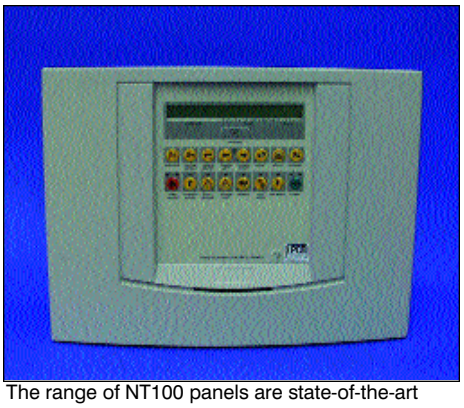
508.014.015.A

1700 5 Aperture

508.014.039.A

1700 8 Aperture

NT100 Conventional Controllers



The range of NT100 panels are state-of-the-art intelligent fire panels, which provide many of the features normally only found on more expensive analogue addressable panels. The range of control panels are LPCB approved to EN54Pt. 2 and 4 and include many local approval authorities around the world. The panels are supplied in 8 and 16 zone versions. Each detection zone can support up to 32 conventional detectors. The user interface is provided through a combination of LEDs and a 2 x 40 character LCD display. The LCD display provides a full customer definable text display of the alarm or fault condition whilst also displaying zones in alarm, fault or isolate status. The display also indicates the outputs that have been activated. Each control panel can have up to a maximum of 3 repeaters.

Features

- LPCB & ANPI (BOSEC) approved to EN54 Parts 2 and 4
- Customer friendly, multi language information on LCD display
- Comprehensive fault diagnostics
- 8 and 16 zone Panels
- Can be used with a wide range of approved detectors
- Detector removal monitoring
- 4 monitored Sounder outputs up to 4A
- 4 monitored Relay outputs
- 3 programmable auxiliary inputs
- 3 levels of alarm discriminations per zone
- One common fault relay
- Internal batteries (up to 12Ah)
- Programmable cause and effect
- Programmable user access levels
- Can interface to intrinsically safe System 601
- Manned/ unmanned mode
- Optional fireman's interface
- Optional printer
- Optional repeater units
- Optional I/O expansion board
- 16 digital outputs or 16 relay output options

Technical Specification

Dimensions	320H x 430W x150D mm
Weight	6.3kg
Power Supply	198 -264Va.c.
Quiescent Current	50mA @ 24Vd.c.
Alarm Current	1Amp @ 24Vd.c.
Operating Temp	0 to +40°C
Operating Humidity	0-90% RH non-condensing

*Datasheet - Product Code **PSF95** "NT Fire Control Panels"*

Standard Fire Control Panel		*Standard Fire Repeater Panel*	
Country	**NT108**	**NT116**	**NT116R**
U.K.	**508.022.008**	**508.022.016**	**508.022.038**
Spain	**-**	**508.022.019**	**-**
Belgium	**508.022.009**	**508.022.017**	**508.022.044**
Holland	**508.022.010**	**508.022.018**	**-**

Fire Panels with Integral Fireman's Interface		
Country	**NTF08**	**NTF16**
Finland	**508.022.011**	**508.022.029**
Denmark	**508.022.014**	**-**
Holland	**508.022.042**	**508.022.043**

Product Codes

The following product codes include all the optional extras which can be included as part of your customer's requirements. Additional spare parts are also included.

509.022.001

NT100 Series Spare Commissioning Kit

Included With All Panels

509.022.008

PRN-02 Spare Printer Paper For PRN-01 (Supplied one per pack)

509.022.011

NT100 Spare PSU For NT,NTR & NTF Variants

509.022.013

NT Flush Mount Bezel

Ancillaries

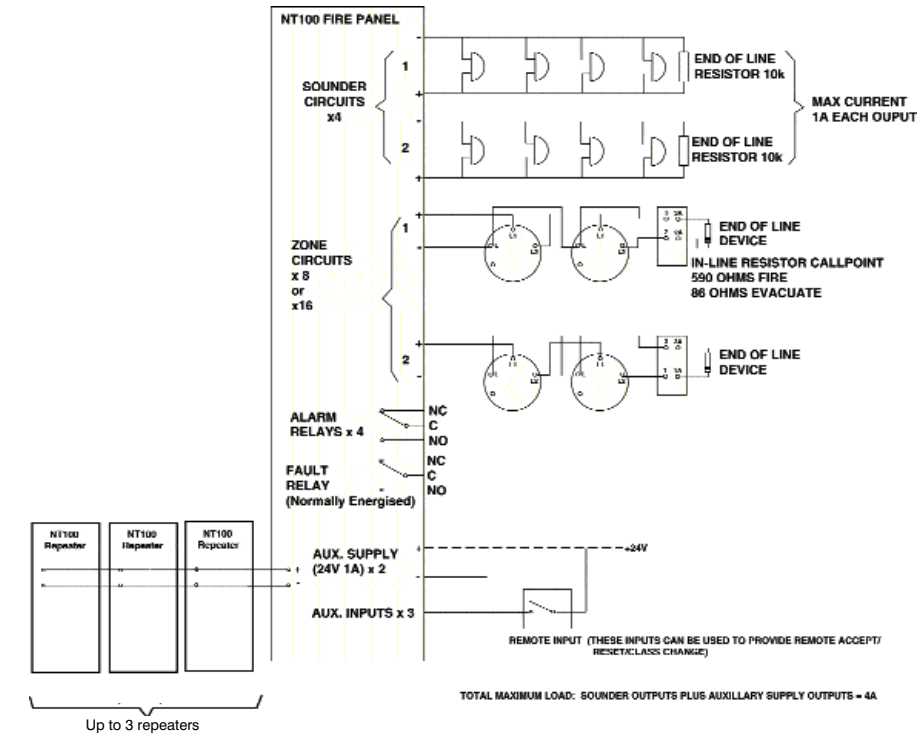
509.022.035

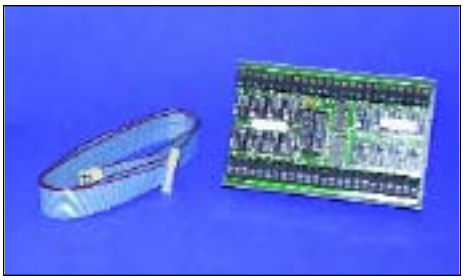
NT/NTR/NTF CPU Board V1.9 Spare

509.022.033

NT/NTR/NTF Display PCB square

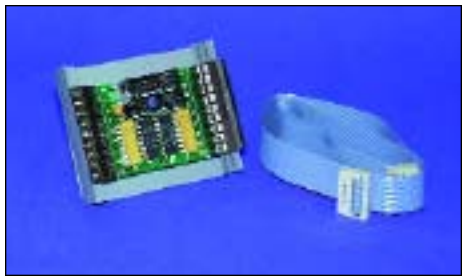
General Wiring Diagram





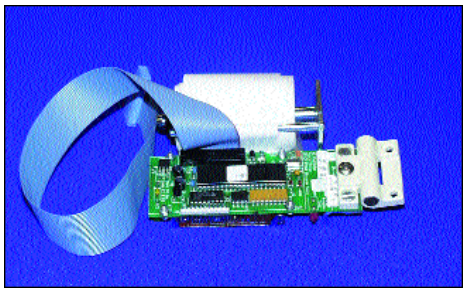
509.022.004

NTX-02 16 Way Relay Output Board (24Vd.c.@1A) Requires NTX-01 Expansion Board



509.022.005

NTX-03 16 Way Digital Output Driver Board - Requires NTX-01 Expansion Board

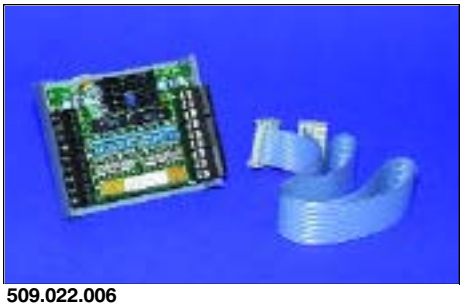


509.022.007

PRN-01 Optional Integral Printer for use with NT & NTF Controller Variants

509.022.003

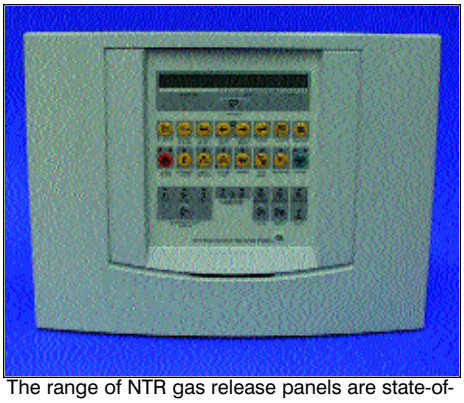
NTX-01 4 Way Expansion Board - Supplied Fitted to the NTF And NTR Controllers. Also Supports NTX-02,03,04 Expansion Boards



509.022.006

NTX-04 16 Way Digital Input Board for use on Special NT Controller Variants only

NTR100 Conventional Extinguishing Controllers



The range of NTR gas release panels are state-of-the-art intelligent panels, which enable a wide variety of gas release applications to be implemented. The panel is provided with default settings to suit most INERGEN®, FM200™ and CO_2 applications and can be programmed to suit most other gas releasing applications. For compatibility with latest standards the panel complies with all relevant parts of EN54 part 2 and 4. The NTR panel is designed to comply with BS7273 and can be installed to fully comply with BS5839 Pt 1 and BS6266.

System Operation (Default UK Operation)

Stage 1 - The panel stays in Stage1 Fire Alarm until the fire or false alarm source is removed and the panel is reset or Stage 2 ensues.

Stage 2 - The panel stays in Stage 2 for 30 seconds (adjustable) to provide a Pre-release Warning during which time the HOLD or ABORT sequences can be initiated.

Stage 3 - The panel remains in Stage 3 Gas Release for the solenoid firing time or until the release confirmation is received from the High Pressure Switch.

Stage 4 - The panel remains in the Fire Alarm condition and indicates the gas released message until the system is silenced and reset. Failure to receive a release confirmation will initiate a fault.

The user interface is provided through a combination of LEDs and a 2 x 40 character LCD display. The LCD display provides a full customer definable text display of the alarm or fault condition whilst also displaying zones in alarm, fault or isolate status. The display also indicates the outputs that have been activated.

Features

- ANPI (BOSEC) Approved
- Customer friendly, multi language information on LCD display
- Comprehensive fault diagnostics
- Manual release zone - direct to stage 2
- Can be used with a wide range of approved detectors
- Detector removal monitoring
- 2 monitored Sounder outputs up to 4A
- 2 monitored Solenoid circuits
- 4 monitored Relay outputs
- 3 programmable auxiliary inputs
- 3 levels of alarm discriminations per zone
- One common fault relay
- Internal batteries (up to 12Ah)
- Programmable cause and effect
- Programmable user access levels
- Can interface to intrinsically safe System 601
- High and Low pressure monitoring
- Initial/Reserve changeover facility
- Optional Door Interlock
- Optional remote hold and abort
- Optional Auto/Manual key switches
- Optional I/O expansion board
- 16 digital outputs or 16 relay output options

Technical Specification

Dimensions	320H x 430W x 150D mm
Weight	6.3kg
Power Supply	198 -264Va.c.
Quiescent Current	50mA @ 24Vd.c.
Alarm Current	1Amp @ 24Vd.c.
Operating Temp	0 to +40°C
Operating Humidity	0-90% RH non-condensing

Note: The NTR is compatible with the T500 range of ancillaries.

Product Codes

	NTR-08 Single Area	NTR-16 Dual Area
UK	**508.022.003**	-
Belgian	**508.022.004**	-
Dutch	-	**508.022.021**
Danish	**508.022.006**	**508.022.025**
Finnish	**508.022.001**	**508.022.022**
Norwegian	-	**508.022.023**
Swedish	**508.022.002**	-

*Datasheet - Product Code **PSF106** "NTR Intelligent Release Panels"*

Product Codes

The following product codes include all the optional extras which can be included as part of your customer's requirements. Additional spare parts are also included.

509.022.001

NT100 Series Spare Commissioning Kit Included With All Panels

509.022.007

PRN-01 Optional Integral Printer For Use With All NT Controller Variants

509.022.008

PRN-02 Spare Printer Paper For PRN-01 supplied one per pack.

509.022.011

NT100 Spare PSU For NT,NTR & NTF Variants

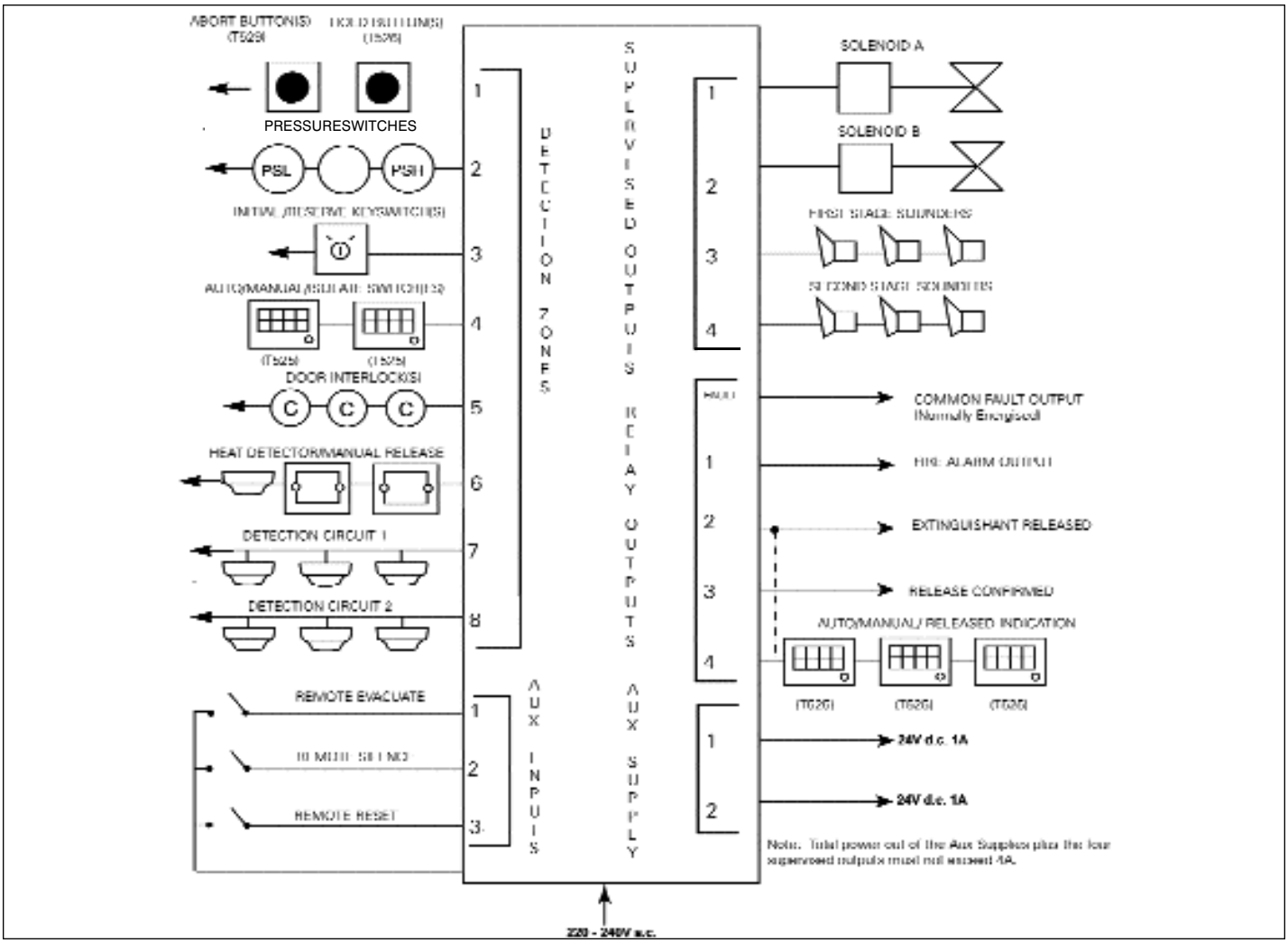
509.022.013

NT Flush Mount Bezel

509.022.033

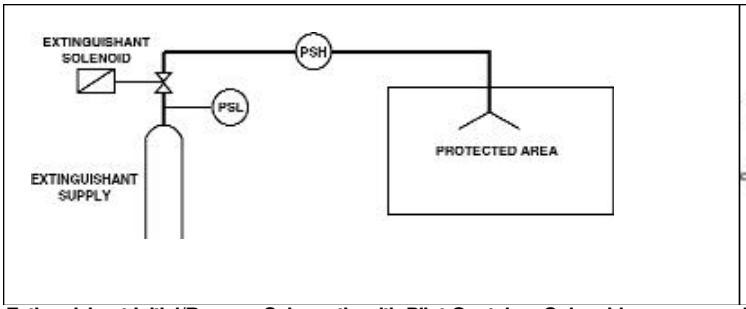
NT/NTR/NTF Display PCB Spare

NTR - Typical Wiring Schematic for Single Area P anels

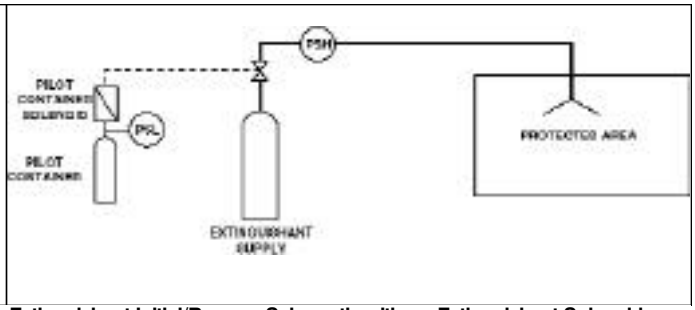


Typical Extinguishing Gas Release Applications

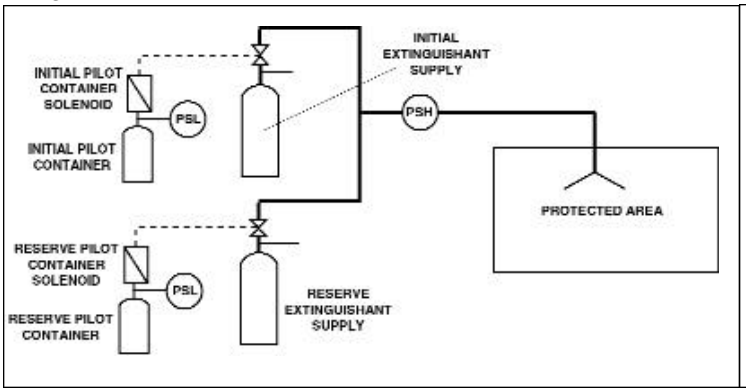
Extinguishant Schematic Configuration with Extinguishant Solenoid



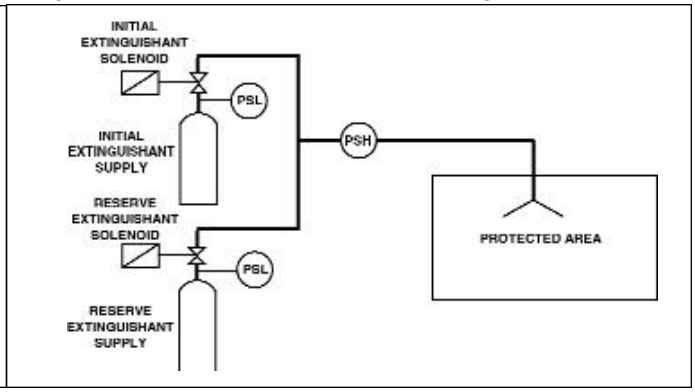
Extinguishant Schematic Configuration with Pilot Container Solenoid



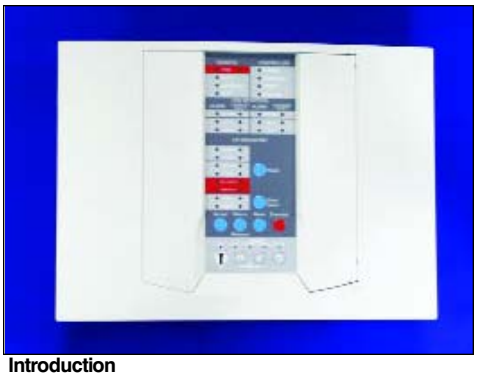
Extinguishant Initial/Reserve Schematic with Pilot Container Solenoid



Extinguishant Initial/Reserve Schematic with Extinguishant Solenoid



MXCE Conventional Fire Detection & Extinguishing Controller



Introduction

The self-contained MXCE panels provide all the required monitoring and control functions to install a complete fire detection, alarm and extinguishing system. The MXCE T540 and T550 controllers support 2 and 4 detection zones respectively. Coincidence operation is available as standard on zones 1 and 2. Additionally on the T550, zones 3 and 4 can be used for extinguishing (coincidence) or as independent fire alarm zones.

The exceptionally priced T540 and T550 controllers are designed as feature enhanced, aesthetically modern replacement for the current, more expensive and heavily dated T530 and T520 Extinguishing panels. Additionally, the introduction of 2-wire sounder capability (detectors and sounders on the same 2-wire circuit) to the extinguishing systems market will achieve significant cost and installation savings.

Installation Features

The MXCE offers flexible mounting arrangements, with easily removable door, multiple conduit entries and large terminations, designed specifically for simplified installation.

- Reversible back-box for top or bottom conduit and cable entry
- Surface or semi-flush mount
- Terminations that suit up to 2.5mm² CSA cable

Power Supply

The power supply is designed to comply with the latest standard (EN54 pt4). The internal mains PSU provides all power plus charging and monitoring of the 2 x 12V lead acid batteries (up to 7 Ah).

- 1.8A PSU/Charger
- Panel battery capacity - 2 x 7Ah batteries internally

Panel Functions

- Coincidence operation zones 1 and 2
- Optional coincidence operation on zones 3 and 4(T550)
- Auto/Manual select
- 2-wire sounders (on the detection zones)

Inputs and Outputs

- 2 or 4 zones
- First stage sounders (sounder circuit 1 and 2-wire sounders)
- Second stage sounders (sounder circuit 2)
- Mode-select Auto/Manual input
- Extinguishing Disable input
- Hold button input
- Abort button input
- High and low pressure extinguishant monitor inputs
- Manual electrical release input
- Signalling fault monitor

The following additional Inputs/Outputs are available on the T550

- Fire and fault relays
- Mode select/status indication
- Mimic inputs (silence/reset/evacuate)
- Door interlocks

MXC-DIGI

A uniquely designed plug-in digital dialler which fits inside the panel and provides fire, fire test and fault signalling.

Sounders

Each MXCE zone can support up to sixteen Tyco 2-wire sounders, which can be any combination of Tyco 602SBD sounder base units or wall mounted Symphoni Sounders.

Panel Features

- Available in 2 and 4 zone variants
- Operates with Tyco 600 Series Conventional Detectors
- All zones supports Tyco 2-wire sounders
- 4 zones variant offers extinguishing coincidence functionality on zones 3 & 4
- T550 supports up to 3 x T56x Series of remote Status Indicators
- Uniquely supports plug-in Central Station communicator within the panel unit
- Designed to comply with BS7273 and EN54 pts 2 &4
- Can be installed to meet the requirements of BS5839 pt1
- MXCE LED display replaces T530 filaments - reduces associated maintenance and time costs
- Aesthetically pleasing design - 332W x 240H x 100D (mm).

Product Codes

508.030.501
MXCE T540 2 zone conventional extinguishing controller

508.030.502
MXCE T550 4 zone conventional extinguishing controller

509.030.005
MXC-DIGI Plug-in Scantronic Minicom Communicator and mounting kit.

509.030.016
MXCE Zone End of Line Unit (Pk 8)

509.030.015
MXCE Spare Key (2 off)

Prescient (Conventional Extinguishing Controllers)

The prescient range of extinguishant panels is a powerful yet user-friendly series of control panels. They are designed and manufactured to a high standard and provide unrivaled value for money by offering a highly featured panel at a lower market price.

Each panel in this series has extensive configuration options but remains “simple to install, program and operate” as reported by satisfied installation engineers and critical end-users.

A comprehensive range of technically detailed, support documentation relating to commission-ing, operating, maintenance and fault finding is easily available if required. In addition, a complete range of compatible accessories is available to support the series and satisfy most customer requirements.

The prescient range of extinguishing panels is available in two variants - either as a gaseous extinguishant panel or a pre-action water sprinkler panel. Panels are housed in well-designed enclosures with partially glazed doors.

Steel parts are finished in a hard-wearing epoxy paint.

Three fully - monitored detection zones are provided. Zones 1 and 2 normally provide first stage and second stage fire conditions to allow extinguishant discharge (double-knock zones). Zone 3 is an auxiliary zone for detection only purposes. Zone 4 is used as a manual release zone.

Two fully monitored alarm circuits are provided, each rated at 1A and may have various configuration options via the engineers’ DIL switch settings. Two fully monitored actuator/solenoid circuits, each rated at 1A, operate simultaneously upon “extinguishant release”.

The panel can be operated in either automatic mode or manual mode. In the manual mode, the detection circuits will continue to operate, giving first stage alarms and signals to ancillary equipment, but will not automatically actuate the extinguishing systems. This mode can only be overridden by the operation of a manual release unit. On operation of the manual release, a separate or different sounder could be activated. In the automatic mode, following a double knock situation, the release facility will be activated at the end of the time period.

The panel provides 0.5 A output at 28V DC to operate interior/ exterior status indicator units. Outputs for auto, manual and discharge are provided at 250mA each.

Eight normally - open inputs provide for remote evacuate, silence alarms, systems reset, lock-off input, low pressure input, gas discharged pressure switch input, remote abort and remote fault. Clean contact relays are provided for first stage signalling, second stage signalling, system reset, common fire, common fault and system discharged.

Please note that in contrast to the T530, the stand alone “abort” button feature is not compatible with this panel.

Top-entry plastic grommets, bottom-rear entry plastic grommets (for mains) and rear entry knock-outs are designed to assist with cable termination.

Panels are boxed complete with three-sticker sets allowing user selection and application on site.

Features

- Suitable for gaseous extinguishing & pre-action water sprinkling systems
- Designed to BS7273 Part 1
- Monitored actuator/solenoid release
- Comprehensive relay signalling facilities
- Easily removable chassis
- Removable cable-entry grommets
- Adjustable pre-discharge delay
- Variable discharge configuration
- Membrane facia with tactile switches
- Zone isolate features
- Complies with EMC and LVD Directives

Panel Dimensions

Height: 445mm

Width: 405mm

Depth: 105mm

Product Codes

Prescient Gaseous Extinguishing Panel

2500/046 Prescient gaseous extinguishing panel - 2 extinguishing zones, programmable coincidence, 1 manual release zone, 1 peripheral zone; space for 6.2 Ah battery set (2 x 12V).

Prescient Pre-Action Water Sprinkler Extinguishing Panel

2500/045 Prescient pre-action water sprinkler extinguishing panel - 2 extinguishing zones, programmable coincidence, 1 manual release zone, 1 peripheral zone; space for 6.2Ah battery set (2 x 12v)

Extinguishing System Extras

2500/048 Status indicator; maximum load - 3 per panel.

2500/049 Status indicator complete with manual release and auto/manual keyswitch; maximum load - 3 per panel.

2500/050 Status indicator complete with manual release, auto/manual keyswitch and timer hold; maximum load - 3 per panel.

2500/051 Weatherproof 3 way status indicator; maximum load - 1 per panel.

2500/052 Weatherproof 3 way status indicator with key switch; maximum load - 1 per panel.

2501/025 Manual release unit.

2501/028 Weatherproof manual release unit (IP 65).

2500/507 Weight monitor system complete (1 load cell and 1 control unit).

2500/053 Actuator suppression kit.

T510 Extinguishant Changeover Unit

The T510 is a manual keyswitch operated unit for use on extinguishing systems. The unit allows manual changeover between MAIN and RESERVE cylinder banks and includes an OFF position that disables the operation of the solenoids. The T510 also provides a fault relay, which monitors the solenoid and solenoid wiring. The T510 is provided with 2 keys.

Technical Specification

Input power supply:	24Vd.c. nominal
Current consumption:	Standby - 50mA Fault - 15mA Release - 65mA (excluding solenoid)
Fault relay:	Changeover contact 1A @ 30V d.c.
Solenoids:	Switched positive for 24V
Dimensions:	196 H x 196 W x 90 D mm
Weight:	2 Kg
Operating Temp:	-10 to +55°C
Humidity:	up to 95% RH non-condensing
EMC/RFI:	CE marked

Product Code

526.001.016.T

T510 Extinguishing - Main To Reserve Changeover Unit - Thorn branded

*Datasheet - Product Code **PSF30** "T530 Fire Detection & Extinguishing Systems Control Unit"*
Manual - 18A-04-D1 "Fire Detection Manual"

T564 Extinguishing System Status Indicator and Mode Select Switch

A four way status indicator and mode select keyswitch for use with extinguishing controllers. In addition to the indications provided on the T563, the T564 has a mode select keyswitch and LED indicator to identify which units initiated the manual mode.

The T564 provides the following features:-

- Clear Visual Indications
- Modern design to compliment all Interiors
- LED Visual Indicators
- Removable mode select key to provide functional security
- Compatible with standard UK double gang electrical back boxes

Technical Specification

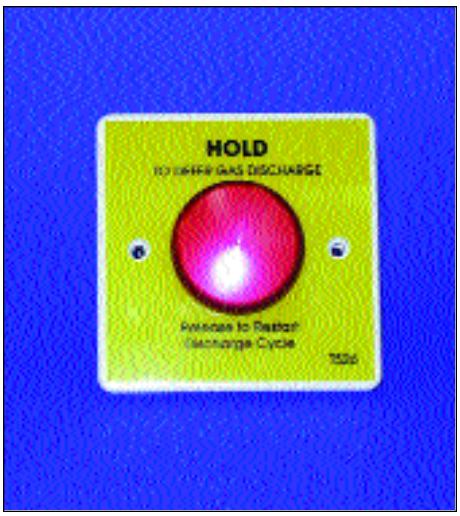
Input Power Supply: 24Vdc nominal
Current Consumption: 30mA per LED
Dimensions: 86W x 146Hmm

Product Code

508.030.504

MXCE T564 Indicator Status Unit with Mode Select Switch

T526 HOLD & T529 ABORT Switch Unit



The T526 and T529 are large mushroom head robust push buttons for use on any extinguishing release system, although integral resistors are fitted to suit T520, T530 and NTR panels. The switch is double pole for maximum reliability. These switches can be surface or flush mounted using standard UK style single gang electrical back boxes.

Operation will vary according to the panel used. Typically on the T520 and T530 release of gas is held for as long as the T526 HOLD switch is depressed. If the switch remains depressed for more than 4 minutes in the quiescent mode then a fault condition is raised. The T529 ABORT switch will typically revert the system back to Manual mode.

Technical Specification

Dimensions: 71H x 71W x 64D (max) mm

Weight: 100g

Environmental: Designed for indoor use

Product Codes

526.001.019

T526 Extinguishing Release Hold Button Unit - Unbranded

526.001.020

T529 Extinguishing Abort Button Unit - Unbranded

*Datasheet - Product Code **PSF30** "T530 Fire Detection & Extinguishing Systems Control Unit"*
Manual - 18A-04-D1 "Fire Detection Manual"

T528 Mechanical Manual Release Unit

These manual release units provide a robust module with a hinged flap retained by frangible washers which ensures that there is an audit trail following a manual release.

The T528 provides access to a pull handle which can be connected to the release levers on the gas containers using wire rope.

Technical Specification

Dimensions: 71H x 71W x 64D (max) mm

Weight: 100g

Environmental: IP54

Product Codes

526.001.018

T528 Mechanical Manual Extinguishing Release Unit - Unbranded

527.001.013

Spare Frangible Washers (Pack of 25)

*Datasheet - Product Code **PSF30** "T530 Fire Detection & Extinguishing Systems Control Unit"*
Manual - 18A-04-D1 "Fire Detection Manual"

T561 Electrical Manual Release Unit

A stand alone manual extinguishant release unit with selectable activation and end of line resistors making the T561 compatible with MXCE, Prescient, System 1700 and NTR Extinguishing Panels.

Product Code

509.030.017

T561 Extinguishing Release Manual Callpoint.

Weatherproof Extinguishing Indicator Units

540.007.001

E1 Single Red lamp unit

Heavy Duty IP67 Cast Aluminium Surface Mount Lamp Unit. Single 24V d.c. red lamp labelled 'Extinguishing System Operated'

Technical Specification

Dimensions:

	H(mm)	W(mm)	D(mm)
E1	100	100	115
E3	300	100	115
I3	230	75	75
I4	230	75	75

540.007.002

E3 Red/Amber/Green lamp unit

Heavy Duty IP67 Cast Aluminium Surface Mount Lamp Unit Three 24Vd.c. lamps:

Red labelled 'Extinguishing System Operated'

Amber labelled ' Extinguishing System Automatic Control'

Green labelled 'Extinguishing System Manual Control'

540.007.006

I3 Red/Amber/Green lamp unit

Sealed IP67 ABS Surface Mount Lamp Unit

Three 24V d.c. lamps:

Red labelled 'Gas Released'

Amber labelled 'Auto'

Green labelled 'Manual'

540.007.007

I4 lamp unit as I3 including auto/manual keyswitch

T563 Extinguishing System Status Indicator

A three way status Indicator for use with extinguishing controllers which provides indication of automatic/manual mode and gas released.

The T563 provides the following features:-

- Clear Visual Indications
- Modern Design to compliment all Interiors
- LED Visual Indicators
- Compatible with standard UK single gang electrical back boxes

Technical Specification

Input Power Supply: 24 Vdc nominal

Current Consumption: 30mA per LED

Dimensions: 86 x 86mm

Product Code

508.030.503

MXCE T563 Indicator Status Unit

Extinguishing Door Interlock Ancillaries & T500 Series Spares

A microswitch lock keep can be used with a deadlock to provide a signal to the T525 mode select unit or direct to the panel to ensure that the extinguishing system is only put into Automatic mode when the door is locked shut.

*Datasheet - Product Code **PSF30** "T530 Fire Detection & Extinguishing Systems Control Unit"*

Manual - 18A-04-D1 "Fire Detection Manual"

Product Codes

527.001.028

Micro-switch Lock Keep & Back-plate For Deadlock

527.001.003

Top Hat Frangible Insert (Spare)

527.001.013

Frangible Washers (Spare)

599.001.011

Lamp 28V 40mA Midget Used On T505/515

599.001.012

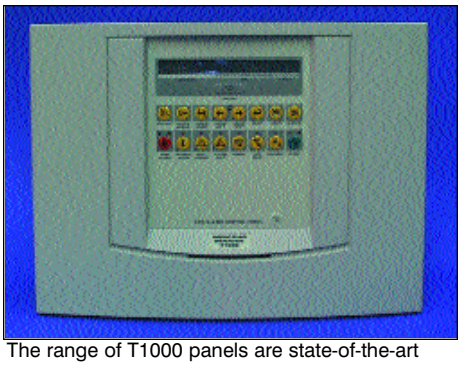
Lamp 28V 60mA Used On T525

599.001.020

Lamp 36V 30mA Bi-Pin Used On T520 & T530

Conventional Marine Panels

T1000 Marine Fire Controller



The range of T1000 panels are state-of-the-art intelligent fire panels, which provide many of the features normally only found on more expensive analogue addressable panels. The panels are supplied in 8 and 16 zone versions. Each detection zone can support up to 32 conventional detectors. The user interface is provided through a combination of LEDs and a 2 x 40 character LCD display. The LCD display provides a full customer definable text display of the alarm or fault condition whilst also displaying zones in alarm, fault or isolate status. The display also indicates the outputs that have been activated.

Features

- Developed for Vessels with less than 300 Detectors
- Approved by all Major Marine Authorities
- Customer friendly, multi language information on LCD display
- Comprehensive fault diagnostics
- 8 and 16 zone Panels
- Can be used with a wide range of Minerva Marine approved Detectors
- 4 monitored Sounder outputs up to 4A
- 4 monitored Relay outputs
- 3 programmable auxiliary inputs
- 3 levels of alarm discriminations per zone
- One common fault relay
- Programmable cause and effect
- Can interface to intrinsically safe System 601
- Manned/ unmanned mode

Technical Specification

Dimensions:	320H x 430W x 150D mm
Weight:	6.3kg
Power Supply:	198 -264Va.c.
Quiescent Current:	50mA @ 24Vd.c.
Alarm Current:	1Amp @ 24Vd.c.
Operating Temp:	0 to +40°C
Operating Humidity:	0-90% RH non-condensing

Product Codes

508.022.035
T1008 8 zone marine NT conventional fire Controller

508.022.036
T1016 16 zone marine NT conventional fire Controller

508.022.037
T1016R repeater for use with T1008 & T1016

*Datasheet - Product Code **PSF96** "T1000 Intelligent Control Panels"*

Optional Product Codes

The following product codes include all the optional extras which can be included as part of your customer's requirements. Additional spare parts are also included.

509.022.001
NT100 Series Spare Commissioning Kit Included With All Panels

509.022.003
NT100 4 Way Expansion Board - Support NTX-02,03,04 Expansion Boards

509.022.004
NT100 16 Way Relay Output Board (24Vd.c.@1A) Requires NTX-01 Expansion Board

509.022.005
NT100 16 Way Digital Output Driver Board - Requires NTX-01 Expansion Board

509.022.010
Spare PSU For T1000

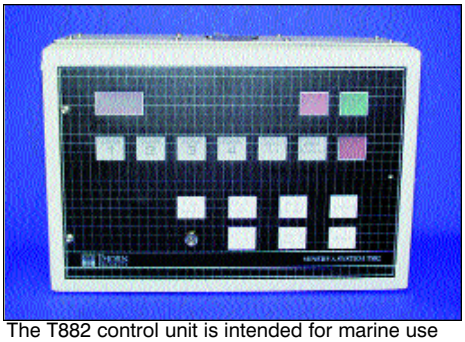
509.022.013
NT Flush Mount Bezel

509.022.015
T1000 Display PCB Spare

509.022.016
T1000 CPU board V1.6 spare

509.022.024
T1000R CPU board V1.6R spare

T882 Four Zone Marine Fire Controller



The T882 control unit is intended for marine use throughout the world. The T882 has two sounder circuits. In the event of an alarm the primary bell circuit will operate the sounders in selected areas. If the alarm is not accepted ("Silenced") within three minutes, the secondary circuit will operate all the other sounders in the system. Any manual Alarm callpoint will override the sounder delay. A manual Alert callpoint will not override the delay of the secondary circuit. The T882 can be powered using one of three options:

1/ with internal power unit

The ship's 110/240V a.c. supply is the primary supply, switching to a monitored ship's 24V d.c. supply in the event of primary supply failure.

2/ with internal power unit

The ship's 110/240V a.c. supply is the primary supply, switching to an internal monitored and charged 24V d.c.-battery supply (Four off, 6V 10Ah lead acids) in the event of primary supply failure.

3/ without internal power unit

The ship's 24V d.c. supply is the only supply connected.

Features

- Approved by a variety of marine authorities
- Up to 4 fire detection zones
- Two alarm levels per detection zone (except I.S. zones)
- Two monitored bell circuits selectable as continuous or intermittent
- Secondary alarm output delay (up to 3 mins)
- Integral power changeover or battery charger option
- Panel test mode
- Faults can be set to either latching or non-latching
- Can interface to intrinsically safe System 601
- Lamp dim feature
- Replaceable legend

Other Input/Output facilities (rated 1A at 30Vd.c. resistive):-

- Two monitored sounder circuits rated at 24Vd.c. 1A each.
- One silenceable and one non-silenceable Common Alarm contact
- One latching/non-latching fault contact
- Four zonal alarm auxiliary contacts
- Repeater outputs switched to common
- One fused 24Vd.c. 1A output
- One external fault monitoring input

Technical Specification

Operating temp.:	-25°C to +55°C
Storage temp.:	-25°C to +70°C
Humidity:	95% RH non-condensing

The T882 control panel is fitted directly to the bulkhead. Housing is zinc plated 1.6mm thick mild steel.

Size	With Power Unit	Without Power Unit
Height	267mm	267mm
Width	398mm	398mm
Depth	187mm	102mm
Weight:	10Kg	8.5Kg

Product Codes

508.013.030
T882 Control Panel c/w Power Unit

508.013.031
T882 Control Panel 24Vd.c. only

509.013.064
T882 PCB Terminal Field

509.013.068
T882 Power Supply Unit

400.007.002 (Available from Thorn Marine)
T882 Handbook

560.001.013
Battery 6V 10Ah

509.013.081
Long voyage spares kit

509.013.080
Short voyage spares kit

Manual - UHM2 "Marine Fire Manual"

Precept Marine Fire Controller

This marine approved range is designed and manufactured to a high standard and approved by Lloyds Register to BS5839 part 4 and to Marine ENV1 & ENV2.

Each panel in this series offers extensive configuration options, in combination with simplicity of panel installation, programming and operation. This is supported by comprehensive documentation relating to commissioning, operation, maintenance and fault identification.

The precept marine panel is supplied in 2, 4, 8,16 or 32-zone formats. Panels are housed in well-designed enclosures with partially glazed doors. Steel parts are finished in durable epoxy paint.

The motherboard and display electronics are fixed to a detachable chassis, thus facilitating a completely empty enclosure for first fix installation. The motherboard is microprocessor-based and includes all of the panel's electronics. Top-entry plastic grommets, bottom-rear entry plastic grommets (for mains) and rear-entry knockouts are designed to assist with cable termination. All panels are designed for use with marine-approved detectors.

All zones are monitored for both open and short circuit fault conditions. To enable compliance with BS5839 part 1, active end of line terminators are provided to enable detector removal to be monitored, whilst maintaining fire response from the remaining detectors. Two alarm circuits are provided as standard, monitored for both open and short circuit faults.

Two changeover relay contacts operate on any fire condition and latch until reset. One non-latching changeover relay contact operates on any fault condition. Zero volt open collector outputs are provided for zonal fire conditions and common fault. Three normally open inputs provide for remote evacuate, silence alarms and reset control.

Features

- Lloyds approved to BS5839 part 4, ENV 1 and ENV 2
- 2, 4, 8, 16 or 32 zone variants
- 230V/24V dual supply options
- A one-man test facility
- User-friendly controls
- Easily-removable chassis
- Membrane facia with tactile switches
- Removable cable-entry grommets
- Zonal and relay outputs
- Non-latching zone 1 feature
- Selectable pulsed/continuous sounder outputs
- For use with Marine Approved accessories
- Complies with EMC and LVD Directives

Product Codes

Precept Marine 230V Panel

2500/774 Precept Marine 2 zone control panel - Lloyds approved to ENV 1 & 2. Space for 3.2Ah S.L.A battery set (2 x 12V)

2500/775 Precept Marine 4 zone control panel - Lloyds approved to ENV 1 & 2. Space for 3.2Ah S.L.A battery set (2 x 12V)

2500/776 Precept Marine 8 zone control panel - Lloyds approved to ENV 1& 2. Space for 6.2Ah S.L.A battery set (2 x 12V)

2500/777 Precept Marine 16 zone control panel - Lloyds approved to ENV 1 & 2. Space for 6.2Ah S.L.A battery set (2 x 12V)

2500/778 Precept Marine 32 zone control panel - Lloyds approved to ENV 1&2. Space for 6.2Ah S.L.A battery set (2 x 12V)

Precept Marine 24V Panel

2500/755 Precept Marine 2 zone control panel - Lloyds approved to ENV 1 & 2 . Uses ship's own primary & secondary 24V DC supplies. Space for 3.2Ah S.L.A. battery set (2 x12V)

2500/756 Precept Marine 4 zone control panel - Lloyds approved to ENV 1&2. Uses ship's own primary & secondary 24V DC supplies. Space for 3.2Ah S.L.A battery set (2 x 12V).

2500/757 Precept Marine 8 zone control panel - Lloyds approved to ENV 1&2. Uses ship's own primary & secondary 24V DC supplies. Space for 6.2Ah S.L.A battery set (2 x 12V).

2500/758 Precept Marine 16 zone control panel - Lloyds approved to ENV 1&2. Uses ship's own primary & secondary 24V DC supplies. Space for 6.2Ah S.L.A battery set (2 x 12V).

2500/759 Precept Marine 32 zone control panel - Lloyds approved to ENV 1& 2. Uses ship's own primary & secondary 24V DC supplies.

Panel Dimensions

Size	2-4 zones	8-zones	16 zones	32 zones
Height	310mm	370mm	445mm	445mm
Width	290mm	326mm	405mm	810mm
Depth	106mm	106mm	109mm	109mm

T680 Marine Power Change Over Unit

The T680 power changeover unit derives power for the T880 and T881 control panels. The unit takes primary power from the ship's AC supply and provides a standby supply from the ship's 24Vd.c. system i.e. the unit does not charge any internal batteries. The T680 unit provides a smooth changeover from primary to secondary supply and vice-versa. It signals main and standby supply failure signals to the T88x control equipment. It also incorporates a dimming circuit for the lamps of the controller.

The interface to the control panel is made with a six core connection. The unit is approved by a variety of marine authorities

Technical Specification

Operating temp.:	-25°C to +70°C
Storage temp.:	-25°C to +70°C
Humidity:	95% RH non-condensing
Mains Supply:	120/240Va.c. ± 20% at 50/60Hz
Standby Supply:	24Vd.c. (must not exceed 32Vd.c.)

The T680 unit is normally mounted onto a bulkhead using the H frame bracket. A bezel for 19" rack mounting is available. The housing has two removable gland plates (top and bottom) for cable access.

Housing is zinc plated 1.6mm thick mild steel to BS 1706 ZN3.

Finish is zinc plated and painted to P.S. 121.121.022.

Dimensions:	267H x 398W x 150D mm
Ingress Protection:	IP53
Weight:	17Kg (with bracket)
	13.5Kg (without bracket)

Product Codes

508.013.016

T680 Power changeover unit

509.013.026

T680 Spares kit

Manual - UHM3 "Marine Fire Manual"

Batteries, PSU and Door Release Units

Batteries

Product Codes

660.001.003

Battery sealed L-A

560.001.013

Battery sealed L-A replaces parts 3145 and 30-102

3085

Battery sealed L-A replaces 660.001.014 and 30-111

3010

Battery sealed L-A replaces 660.001.007, SLA21 and 30-103

3071

Battery sealed L-A replaces 660.001.009 and 30-105

660.002.010

Battery sealed L-A replaces 3146, SLA04 and 30-112

3072

Battery sealed L-A replaces 660.001.005, SLA07 and 30-101

660.002.012

Battery sealed L-A replaces 3147, SLA012 and 30-110

560.001.016

Battery sealed L-A replaces 3148, SLA17 and 30-109

660.001.004

Battery sealed L-A (Bolt terminal) replaces 3014, SLA24 and 30-106

560.001.012

Battery sealed L-A replaces 3149, SLA38 and 30-107

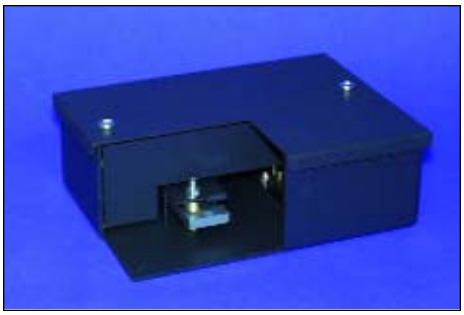
3150

Battery sealed L-A replaces SLA65 and 30-108

Product Codes	Model No.	Voltage (V)	Ah	Dimensions (mm)		
				Length	Width	Height
660.001.003	NP1.2-6	6	1.2	97	25	54.5
560.001.013	NP10-6	6	10	151	50	97.5
3085	NP1.2-12	12	1.2	97	48	54.5
3010	NP2.1-12	12	2.1	178	34	64
3071	NP2.8-12	12	2.8	151	50	97.5
660.002.010	NP4-12	12	4	90	70	106
3072	NP7-12	12	7	151	65	97.5
660.002.012	NP12-12	12	12	151	98	97
560.001.01 6	NP17-12	12	17	76	180	165
660.001.004	NP24-12B	12	24	175	166	125
560.001.012	NP38-12	12	38	179	165	170
3150	NP65-12	12	65	350	166	174

Door Release Equipment

Cable Release & Release Button



518.003.003

77CR19 Cable release 24Vd.c.

518.003.004

77CR19 Cable release 240Va.c.

519.001.007

Door release button UK single gang mounting

The 77CR19 cable release unit is used for automatically closing roller shutter doors in the event of a fire.

Technical Specification

Dimensions:	130H x 180W x 60D mm
Weight:	2.5Kg
Voltage:	240Va.c. / 24Vd.c.
Current:	Negligible / 500mA
Temp.:	-20°C to +45°C
Holding Force:	50Kg
IP Rating:	IP40

Door Release Magnet

High quality door release magnet sets complete with keeper plate.

Technical Specification

Power Supply:	24Vd.c.	240Va.c.
Dimensions:	100H x 100W x 64D mm	
Weight:	0.51Kg	
Holding Force:	18Kg	
IP Rating:	IP40	
Temp.:	-10°C to +55°C	
Current:	60mA	25mA

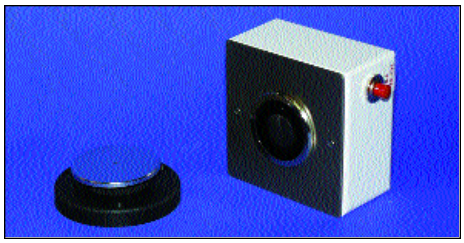
518.004.004

Door Release Magnet Set 240Va.c.

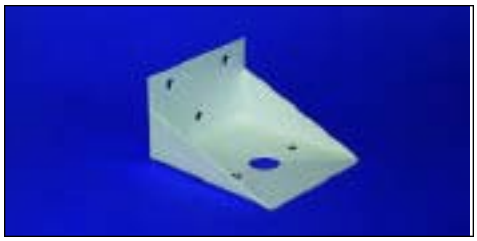
518.004.005

Door Release Magnet Set 24Vd.c.

Door Release Units



Product Codes
40-103
Door release unit 24Vd.c. with keeper plate
40-104
Door release unit 240Va.c. with keeper plate

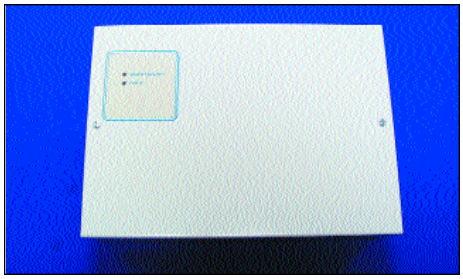


Product Code
40-105
Floor mounting brackets for **40-103/104**
Dimensions: 100H x 85W x 55D mm
Cable Entry: 20mm

Technical Specification - *Door Release Units*

	40-103	**40-104**
Dimensions:	85H x 85W x 46D mm	
Armature Dims:	Dia 72mm x 21mm deep	
Voltage:	24Vd.c.	240Va.c.
Hold Force:	17Kg	20Kg
Current:	60mA	20mA
Residual Magnetism:	5%	5%

Door Release Power Supply



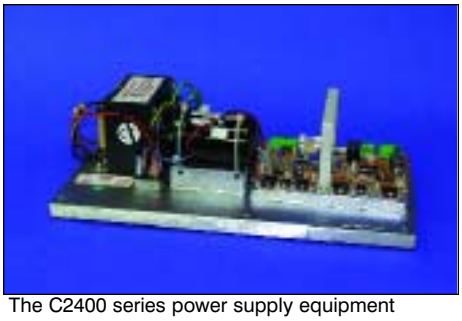
The Transformer Rectifier is a dual purpose, smoothed power supply providing either an energised or de-energised output upon activation. The output may be activated by utilising a set of volt free contacts from a fire or security panel, or by providing a 12/24Vd.c. trigger voltage from other apparatus. The transformer rectifier units are normally used to control the operation of other 24Vd.c. equipment such as the magnetic door retainers. The units are ideal for applications where the supply is to be energised from a remote source.

Technical Specification
Input: 240Va.c.
Output: 24Vd.c. 3A
Dimensions: 230H x 320W x 75D mm
Product Code
558.004.007
TRR-243 3A Door Release PSU

General Power Supply Units

*Datasheet - Product Code **PSF25** "C2400 Series Power Supply Unit"*
Manual - FSSD-4.1.4.1 "Fire Detection Manual"

C Range Chargers



The C2400 series power supply equipment provides primary and secondary power for fire alarm systems. The power supply consists of an AC supply operated charger, a stand-by sealed lead-acid battery and an attractive housing. Under normal conditions, the charger provides all the system power and maintains the battery in the charged condition. When the AC supply fails, the stand-by battery takes over.

Features

- A range of chargers and housings to suit different system configurations
- May be used with both conventional and analogue addressable fire systems
- Large aluminium heatsink eliminates need for unsightly ventilation grills
- Temperature compensated output ensures correct charging voltage at all times
- Automatic protection for short-circuit conditions is designed to prevent damage
- Optional voltmeter and ammeter

Technical Specification
Operating Temp: -20°C to +55°C
Storage Temp.: -20°C to +70°C
Relative Humidity: 95% RH non-condensing
Output Voltage: 27Vd.c.

Product Code
558.004.006
C Range charger 24V 4 Amp

Housing Type D

The housings are available in two sizes and can be supplied with an ammeter and voltmeter if required. An 'AC supply on' indicator is fitted.

Technical Specification
Type D: 420H x 436W x 210D mm
Holds charger and up to 2 x 38Ah sealed batteries at 24V d.c.

Product Codes
558.004.013
Housing Type D complete with meters
558.004.014
Housing Type D

Housing Type C

The housings are available in two sizes and can be supplied with an ammeter and voltmeter if required. An 'AC supply on' indicator is fitted.

Technical Specification
Type C: 290H x 416W x 160D mm
Holds charger and up to 2 x 12Ah sealed batteries at 24V dc

Product Codes
558.004.015
Housing Type C complete with meters
558.004.016
Housing Type C

Addressable 900 Series Detectors

Body	Optical	Ionisation	HPO	R of R Heat	CO
LPCB	MR901	MF901	MR901T	MD901	MU901
NSTC		MF901	MR901T		
UL/FM	912P	912I	912HP	912H	
Marine	MR901M	MF901M		MD901	

The M900 series are a range of low profile addressable fire detectors. These unobtrusively styled detectors have a number of unique design features to improve their operation, installation and ease of servicing.

Through innovative design the M900 Series detectors have reduced the installation and servicing time to a minimum, needing only one visit to complete the installation. The detectors also have a park position, which eases detector servicing.

The unique smart key feature ensures that the address is transferred to the base after installation. This ensures that the detector addresses are not accidentally confused during service visits.

The M900 series includes the unique Carbon Monoxide CO fire detector, which provides a general purpose fire detector with unprecedented early detection capability and excellent false alarm immunity. The CO fire detectors are the first choice for sleeping risks.

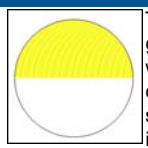
Also included within the range is the intelligent high performance optical smoke (H.P.O.) detector The use of the patented optical sensing chamber, together with refined signal processing, has enabled the introduction of a smoke detector suitable for fast, reliable smoke detection of both slow and fast developing fires. The H.P.O. can be seen as a truly universal smoke detector, suitable for most applications.

Features

- Unique early detection CO fire detector
- Intelligent Universal HPO Smoke Detector
- Low profile, discreet and unobtrusive
- Superior performance and reliability
- Unique 'Smart Key' feature
- Designed for fast, easy installation
- Optional Locking Kit
- Integral and remote alarm LED
- Series of Product Approvals

The M900 Low Profile detectors can be custom made in several colours, please contact the Walthamstow office for details.

Carbon Monoxide Fire



The CO fire detector is a unique general purpose fire detector which provides very early warning of slow smouldering fires. Ideal for sleeping risks the CO fire detector is also well suited to many applications where heat detection is insufficient but smoke detection causes false alarms.

As CO travels more freely than smoke the positioning of CO fire detectors is more flexible.

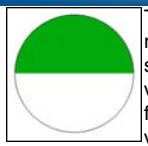
This feature is particularly useful in large complex structures such as atria and warehouses, where positioning of smoke detectors is difficult. The MU901 is LPCB approved in normal and high sensitivity settings.

Product Codes	Approval	Branded	Model
516.059.001.A	LPCB	ADT	MU901
516.059.001.T	LPCB	Thorn	MU901
516.059.001.Y	LPCB	Tyco	MU901

*Datasheet - Product Code **PSF94** "Carbon Monoxide Fire Detector"*

Manual - Vol01B-03-D7 "Detectors Fire Manual"

High Performance Optical Smoke



These detectors react to the whole range of fire products from slow smouldering fires, producing visible particles to open flaming fires producing large numbers of very hot smaller sized aerosols. It combines optical and heat detector technology to detect clear burning fire products which hitherto could only be easily detected by ion-chamber detectors.

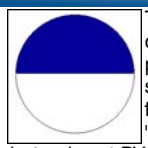
For normal ambient conditions, the high performance optical detector behaves as a normal optical detector. When a rapid rise in temperature is detected the sensitivity of the detector increases and the presence of smoke will confirm a fire condition which will be transmitted as an alarm level. The HPO will not operate on a rate of rise of temperature alone.

Product Codes	Approval	Branded	Model
516.055.001.A	LPCB	ADT	MR901T
516.055.001.T	LPCB	Thorn	MR901T
516.055.001.Y	LPCB	Tyco	MR901T
516.055.031	UL	Thorn	912HP
515464	UL	Grinnell	912HP

*Datasheet - Product Code **PSF84** "M600/900 Low Profile Fire Detector Range"*

Manual - Vol01B-03-D4 "Detectors Fire Manual"

Optical Smoke



These detectors are capable of detecting the visible smoke produced by materials which smoulder or burn slowly, i.e. soft furnishings, plastic foam etc;. or 'smoke' produced by overheated but unburnt PVC. These detectors are particularly suitable for general applications and areas where cable overheating may occur e.g. electrical services areas. The novel design of the asymmetrical sampling chamber and signal processing techniques stop unwanted alarms caused by very small insects. i.e. thrips. Smoke entering the sampling chamber scatters the infra-red light pulses onto a photodiode These pulses are converted to an electrical signal which is transmitted as an analogue value.

Product Codes	Approval	Branded	Model
516.057.001.A	LPCB	ADT	MR901
516.057.001.T	LPCB	Thorn	MR901
516.057.001.Y	LPCB	Tyco	MR901
515463	UL	Grinnell	912P
516.057.031	UL	Thorn	912P
516.057.401	Marine	Thorn	MR901M

*Datasheet - Product Code **PSF84** "M600/900 Low Profile Fire Detector Range"*

Manual - Vol01B-03-D6 "Detectors Fire Manual"

Heat

These detectors use two networked thermistors in a bridge configuration to provide a fast response, that depends both on absolute temperature and notes the change of temperature. The rate of rise/fixed temperature heat detectors can be used in areas where smoke sensors are unsuitable due to environmental conditions (smoke, dust etc,). Such areas include kitchens, locker rooms, canteens, garages, loading bays etc.

The integral electronics emulate conventional fire detector's response curves and transmit the state to a controller as an analogue representation of the ambient temperature conditions.

Product Codes	Approval	Branded	Model
516.053.001.A	LPCB	ADT	MD901
516.053.001.T	LPCB	Thorn	MD901
516.053.002	UL	Thorn	912H
515461	UL	Grinnell	912H

*Datasheet - Product Code **PSF84** "M600/900 Low Profile Fire Detector Range"*

Manual - Vol01B-03-D5 "Detectors Fire Manual"

Ion Chamber Smoke

These detectors react to the visible and invisible fire aerosols (products of combustion) and are therefore capable of detecting the early presence of hot smouldering and flaming fires, such as wood, paper etc.

They are particularly suitable for general applications in all areas and use a dual ionisation chamber in which the air is ionised by a single radioactive source (33k Bq Americium 241). The presence of smoke in the sampling chamber causes a change in the balance voltage, between the two chambers. This is then converted to a current level and transmitted as an analogue value.

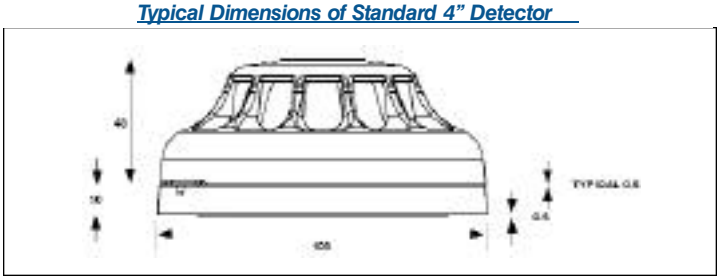
Product Codes	Approval	Branded	Model
516.051.001.A	LPCB	ADT	MF901
516.051.001.T	LPCB	Thorn	MF901
516.051.001.Y	LPCB	Tyco	MF901
516.051.031	UL	Thorn	912I
515462	UL	Grinnell	912I
516.051.401	Marine	Thorn	MF901M

*Datasheet - Product Code **PSF84** "M600/900 Low Profile Fire Detector Range"*

Manual - Vol01B-03-D3 "Detectors Fire Manual"

Technical Specification

Typical Dimensions of Standard 4" Detector



Technical Specification - M901 Series	MD/MR	MF	MU
Weight	112g	137g	137g
Material		FR 110 Bayblend	
Operating Temp.	-20 to +70ºC	-20 to +70ºC	0 to +50ºC
Storage Temp.	-25 to +80ºC	-25 to +80ºC	-20 to +50ºC
Relative Humidity		95% Non-Condensing	
Quiescent Current(typ)	240µA	120µA	120µA

Point Detector Selection Chart

	Environment	Very Clean and Dry	Benign Moderately Clean Regulated Temperature	Dirty - Smoky	Dusty and/or Humid	Hot and Smoky	Open Areas
	For Example	Clean Room Data Processing Suite	Offices Light Industrial Hospitals Residential Passenger Accommodation	Loading Bay/ Warehouse with Diesel, Forklifts etc Heavy Industrial Ferry (Car Deck)	Livestock Pen Mill, Laundry Changing Room	Kitchen Engine Room Test Beds	Atrium Theatre Hanger Oil Rigs Turbine Hall
Fire Loading	**Probable Risk**						
Electronic Equipment **Electrical Switchgear** **Electric Motors** **Cable Conduit**	Cable Pyrolosis (Toxic Fumes) Electrical Arcs (Ignition Source) Associated Electrical	**ASPIRATED** MR901(H) MR901T(H) MF901(H)	**MR901(H/N)** **MR901T(H)** MF901(H)	MR901(L)			**FLAME** BEAM
Fabrics, Clothes **Soft Furnishings** **Paper, Cardboard** **Plastic Foams** **Animal Bedding** **Wood Shavings etc**	Smouldering (Difficult to locate - toxic fumes) Likelihood of Flashover (Back - draught)		**MU901(N)** MR901T(N) MR901(N)	**MU901(L)** MR901(L)	**MU901(N)** MR901(L)	MU901(L)	**MU901(H)** BEAM
Flammable Liquids **Paints** **Solvents** **Flammable Gasses** **Unstable Chemicals** **Foodstuffs**	Flaming Fire Rapid Build-Up of dense smoke High Temperature Associated Explosion Dangers	FLAME MF901(H) MR901T(H) MR901(H) MU901(H)	**FLAME** **MF901(N)** **MR901T(N)** MR901(N) MU901(N)	**FLAME** MF901(L) MU901(L)	**FLAME** MU901(L)	**FLAME** MD901	**FLAME**
General Organic Waste **Animal Fodder** **Wooden Structures** **Solid Fuels**	Smoke and Flame Initially fairly slow but high temps. once established		**MU901(N)** **MR901T(N)** **MR901(N)** MF901(N)	**MU901(L)** **MR901T(L)** MD901	**MU901(N)** MR901(L) MD901	**MD901** MU901(L)	**MU901(H)** **FLAME**
Plastic, Chemicals **Machinery** **Building Materials** **Unknown Contents**	Type of fire risk may vary as can the type of fire (May require a mix of detection types)	ASPIRATED MU901(H) MR901(H) MF901(H)	**MU901(N)** **MR901T(N)** MF901(N) MD901 FLAME	**MU901(L)** **MR901(L)** MF901(L) FLAME MD901	**MU901(N)** MR901(L) FLAME	**MD901** MU901(L)	**FLAME** **MU901(H)** BEAM

Emboldened type face indicate the most suitable - other types indicated may not be optimum for reasons of performance or cost, but real situations may require a combination to cover likely risks. Sensitivity settings (in brackets) apply to all types and are only a guideline.

Conventional 600 Series Detectors

Body	Optical	Ionisation	HPO	R of R Heat	FT	CO
LPCB	MR601	MF601	MR601T	MD601	MD611 60°C	MU601
NSTC		MF601	MR601T			
SSL/NZ*	MR614	MF614	MR614T	MD614		MU614
UL/FM	612P	612I	612HP	612H	622H *135°F* 632H *200°F*	
VdS	MR613	MF613	MR613T	MD613	MD623	
Marine	MR601M	MF601M		MD601	MD611	

*Available from Grinnell Detection Products in Melbourne & Grinnell Supply Sales N.Z.

Features

- Unique early detection CO fire detector
- Intelligent Universal HPOSmoke Detector
- Low profile, discreet and unobtrusive
- Superior performance and reliability
- Attractive new design
- Designed for fast, easy installation
- Optional Locking Kit
- Integral and remote alarm LED
- Series of Product Approvals

The M600 low Profile detectors can be custom made in several colours, please contact the Walthamstow office for details

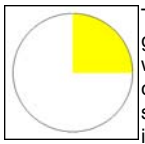
The M600 series are a range of low profile conventional fire detectors. These unobtrusively styled detectors have a number of unique design features to improve their operation, installation and ease of servicing.

Through innovative design the M600 series detectors have reduced the installation and servicing time to a minimum, needing only one visit to complete the installation and having a Park position for the detector to ease the servicing.

The M600 series includes the unique Carbon Monoxide CO fire detector, which provides a general purpose fire detector with unprecedented early detection capability and excellent false alarm immunity. The CO fire detectors are the first choice for sleeping risks.

Also included within the range is the intelligent high performance optical smoke (H.P.O.) detector The use of the patented optical sensing chamber, together with refined signal processing, has enabled the introduction of a smoke detector suitable for fast, reliable smoke detection of both slow and fast developing fires. The H.P.O. can be seen as a truly universal smoke detector, suitable for most applications.

Carbon Monoxide Fire



The CO fire detector is a unique general purpose fire detector which provides very early warning of slow smouldering fires. Ideal for sleeping risks the CO fire detector is also well suited to many applications where heat detection is insufficient but smoke detection causes false alarms.

As CO travels more freely than smoke the positions of CO fire detectors is more flexible.

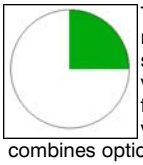
This feature is particularly useful in large complex structures such as atria and warehouses, where positioning of smoke detectors is difficult. The MU601 is LPCB Approved.

Product Codes	Approval	Branded	Model
516.058.001.A	LPCB	ADT	MU601
516.058.001.T	LPCB	Thorn	MU601
516.058.001.Y	LPCB	Tyco	MU601
516.058.001.W	LPCB	Wormald	MU601

*Datasheet - Product Code **PSF94** "Carbon Monoxide Fire Detector"*

Manual - Vol01B-04-D8 "Detectors Fire Manual"

High Performance Optical Smoke



These detectors react to the whole range of fire products from slow smouldering fires, producing visible particles to open flaming fires producing large numbers of very hot smaller sized aerosols. It combines optical and heat detector technology to detect clear burning fire products which hitherto could only be easily detected by ion-chamber detectors.

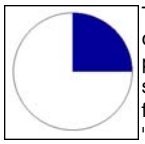
For normal ambient conditions, the high performance optical detector behaves as a normal optical detector. Only when a rapid rise in temperature is detected does the sensitivity of the detector increase and the presence of smoke will confirm a fire condition. The HPO will not operate on a rate of rise of temperature alone.

Product Codes	Approval	Branded	Model
516.054.001.A	LPCB	ADT	MR601T
516.054.001.T	LPCB	Thorn	MR601T
516.054.001.Y	LPCB	Tyco	MR601T
515458	UL	Grinnell	612PH

*Datasheet - Product Code **PSF84** "M600/900 Low Profile Fire Detector Range"*

Manual - Vol01B-04-D4 "Detectors Fire Manual"

Optical Smoke



These detectors are capable of detecting the visible smoke produced by materials which smoulder or burn slowly, i.e. soft furnishings, plastic foam etc;. or 'smoke' produced by overheated but unburnt PVC. These detectors are particularly suitable for general applications and areas where cable overheating may occur e.g. electrical services areas. The novel design of the asymmetrical sampling chamber and signal processing techniques stop unwanted alarms caused by very small insects. i.e. thrips. Smoke entering the sampling chamber scatters the infra-red light pulses onto a photodiode These pulses are converted to an electrical signal which is compared against a preset alarm level.

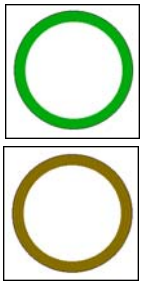
Product Codes	Approval	Branded	Model
516.056.001.A	LPCB	ADT	MR601
516.056.001.T	LPCB	Thorn	MR601
516.056.001.Y	LPCB	Tyco	MR601
516.054.041.W	VdS	Wormald	MR613
515457	UL	Grinnell	612P
516.056.031	UL	Thorn	612P
516.056.401	Marine	Thorn	MR601M

*Datasheet - Product Code **PSF84** "M600/900 Low Profile Fire Detector Range"*

Manual - Vol01B-04-D6 "Detectors Fire Manual"

Heat

These detectors use two networked thermistors in a bridge configuration to provide a fast response,



that depends both on absolute temperature and notes the change of temperature. The rate of rise/fixed temperature heat detectors can be used in areas where smoke sensors are unsuitable due to environmental conditions (smoke, dust etc,). Such areas include kitchens, locker rooms, canteens, garages, loading bays etc.

The integral electronics emulate conventional fire detector's response curves and transmit the state to a controller as an alarm condition.

Rate of Rise

Product Codes	Approval	Branded	Model
516.052.001.A	LPCB	ADT	MD601
516.052.001.T	LPCB	Thorn	MD601
516.052.001.Y	LPCB	Tyco	MD601
516.052.013.W	VdS	Wormald	MD613
515453	UL	Grinnell	612H
516.052.031	UL	Thorn	612H

Fixed Temperature 60°C

Product Codes	Approval	Branded	Model
516.052.011.A	LPCB	ADT	MD611
516.052.011.T	LPCB	Thorn	MD611
516.052.011.Y	LPCB	Tyco	MD611
516.052.033.W	VdS	Wormald	MD623

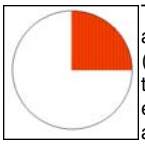
Fixed Temperature 90°C

Product Codes	Approval	Branded	Model
515455	UL	Grinnell	632H
516.052.022	UL	Thorn	632H

*Datasheet - Product Code **PSF84** "M600/900 Low Profile Fire Detector Range"*

Manual - Vol01B-04-D5 "Detectors Fire Manual"

Ion Chamber Smoke



These detectors react to the visible and invisible fire aerosols (products of combustion) and are therefore capable of detecting the early presence of hot smouldering and flaming fires, such as wood, paper etc.

They are particularly suitable for general applications in all areas and use a dual ionisation chamber in which the air is ionised by a single radioactive source (33k Bq Americium 241). The presence of smoke in the sampling chamber causes a change in the balance voltage, between the two chambers. This is then compared against an alarm level.

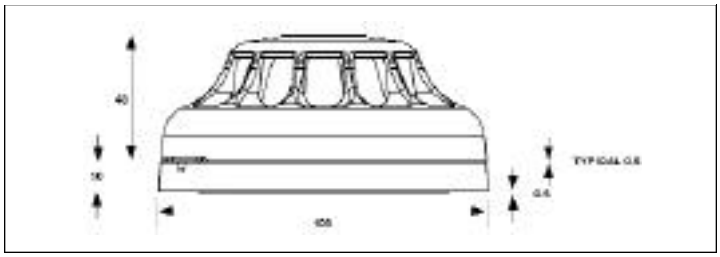
Product Codes	Approval	Branded	Model
516.050.001.A	LPCB	ADT	MF601
516.050.001.T	LPCB	Thorn	MF601
516.050.041.W	VdS	Wormald	MF613
516.050.031	UL	Thorn	612I
515456	UL	Grinnell	612I
516.050.401	Marine	Thorn	MF601M

*Datasheet - Product Code **PSF84** "M600/900 Low Profile Fire Detector Range"*

Manual - Vol01B-04-D3 "Detectors Fire Manual"

Technical Specification

Typical Dimensions of Standard 4" Detector



Technical Specification - M601 Series

	MF	MR	MD	MU
Weight	134g	122g	114g	137g
Material	FR 110 Bayblend			
Operating Temp.	-20 to +70°C	-20 to +70°C	-20 to +70°C*	-20 to +50°C
Storage Temp.	-25 to +80°C	-25 to +80°C	-20 to +70°C	-25 to +70°C
Relative Humidity	95% Non-Condensing			
Quiescent Current(typ)	70µA	60µA	50µA	50µA
Alarm Current(typ)	40mA	36mA	40mA	40mA
Operating Voltage	18-32Vd.c.	18-32Vd.c.	18-32Vd.c.	18-32Vd.c.

*Short Term (<3min) -40 to +120°C

Point Detector Selection Chart

	Environment	Very Clean and Dry	Benign Moderately Clean Regulated Temperature	Dirty - Smoky	Dusty and/or Humid	Hot and Smoky	Open Areas
	For Example	Clean Room Data Processing Suite	Offices Light Industrial Hospitals Residential Passenger Accommodation	Loading Bay/ Warehouse with Diesel, Forklifts etc Heavy Industrial Ferry (Car Deck)	Livestock Pen Mill, Laundry Changing Room	Kitchen Engine Room Test Beds	Atrium Theatre Hanger Oil Rigs Turbine Hall
Fire Loading	**Probable Risk**						
Electronic Equipment **Electrical Switchgear** **Electric Motors** **Cable Conduit**	Cable Pyrolosis (Toxic Fumes) Electrical Arcs (Ignition Source) Associated Electrical	**ASPIRATED** MR601 MR601T MF601	**MR601** **MR601T** MF601	 MR601			**FLAME** BEAM
Fabrics, Clothes **Soft Furnishings** **Paper, Cardboard** **Plastic Foams** **Animal Bedding** **Wood Shavings etc**	Smouldering (Difficult to locate - toxic fumes) Likelihood of Flashover (Back - draught)		**MU601** MR601T MR601	**MU601** MR601	**MU601** MR601	MU601	**MU601** BEAM
Flammable Liquids **Paints** **Solvents** **Flammable Gasses** **Unstable Chemicals** **Foodstuffs**	Flaming Fire Rapid Build-Up of dense smoke High Temperature Associated Explosion Dangers	**FLAME** **MF601** **MR601T** MR601 MU601	**FLAME** **MF601** **MR601T** MR601 MU601	 **FLAME** MF601 MU601	 **FLAME** MU601	 **FLAME** MD601	 **FLAME**
General Organic Waste **Animal Fodder** **Wooden Structures** **Solid Fuels**	Smoke and Flame Initially fairly slow but high temps - once established		**MU601** **MR601T** **MR601** MF601	 **MU601** **MR601T** MD601	 **MU601** MR601 MD601	 **MD601** MU601	 **MU601** **FLAME**
Plastic, Chemicals **Machinery** **Building Materials** **Unknown Contents**	Type of fire risk may vary as can the type of fire (May require a mix of detection types)	ASPIRATED MU601 MR601 MF601	**MU601** **MR601T** MF601 MD601 FLAME	**MU601** **MR601** MF601 FLAME MD601	 **MU601** MR601 FLAME	 **MD601** MU601	 **FLAME** **MU601** BEAM

Emboldened type face indicate the most suitable - other types indicated may not be optimum for reasons of performance or cost, but real situations may require a combination to cover likely risks. Sensitivity settings (in brackets) apply to all types and are only a guideline.

Tyco M600/M900 Detector Series Identification Card

A convenient pocket sized “quick reference card” designed to aid the identification of Tyco M600/M900 Series Detectors. (M900 Series information is on the reverse of card).

Product Code

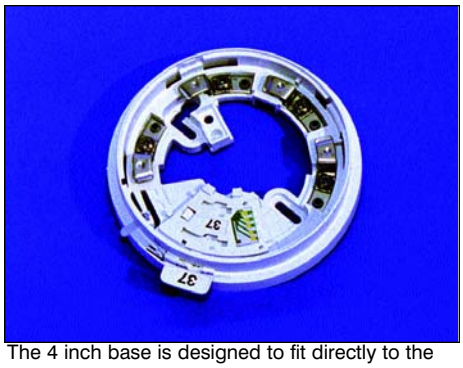
AM2801/000
ID Card

Note: Cards must be ordered in multiples of 100.

Standard Detector Bases

The Standard Universal detector bases are compatible with both conventional (M600) and analogue (M900) addressable detectors. The bases have no electronics and even when the detectors are connected to the bases, they can be electrically disconnected and left in a “park” position. This enables wiring integrity tests to take place without any damage to electronics. When used with addressable detectors, the smart card access key automatically transfers to the base, thus the address remains with the base even if the detector is changed or replaced. An optional, tool removable locking pin allows the detector to be fixed in place to prevent tampering.

M600/900 and 4B - 4 Inch Universal Base



The 4 inch base is designed to fit directly to the ceiling or various common backboxes. This base allows a detector to be fitted indirectly or a functional base to be plugged in between the base and detector.

Features

- Variety of fixing options
- Remote LED connections
- Available with continuity diode fitted
- Anti-tamper facility
- LPCB, Vds, Marine approved (M600/900)
- UL approved (4B)

Product Codes

517.050.001

M600/900 4” Universal mounting base for LPCB, Vds approved detectors

571.070 - **(K07226456)**

M600/900 4” Universal mounting base for LPCB, Vds approved detectors - Zettler Branded

515467

4B - 4” Universal mounting base for UL Approved Detectors - Grinnell Branded.

517.050.601

4B - 4” Universal mounting base for UL Approved Detectors - Thorn Branded.

*Datasheet - Product Code **PSF101** M600/900 Low Profile Detector Bases*

Manual - Vol01B-03-D2 “Detectors Fire Manual”

M600D Continuity Base

The M600D Continuity base is a standard 4 inch base fitted with a continuity diode, for use with all M600 Series detectors. The Base is designed to ensure that the conventional system meets the requirements of BS5839 Pt:1 for call-points placed after detectors. The M600D works with XL, NT, System 1700, MINERVA 1 to 4, MINERVA MDM520 Module.

Product Codes

517.050.007

M600D Diode continuity mounting base.

509.018.006

Active End of Line Unit for use with M600 conventional detectors (not required on NT and XL panels which are supplied with special EOL devices)

*Datasheet - Product Code **PSF84** “M600/900 Low Profile Fire Detector Range”*

Manual - Vol01B-03-D2 “Detectors Fire Manual”

6” Universal Base

The 6” base is specially designed for applications using the US style single gang backbox. The 6” base provides an alternative to the 4” base in most applications and is particularly useful where large holes in the ceiling need covering or where ceilings suffer from condensation.

Features

- Variety of fixing options
- Sealed back and cable entry
- Remote LED connections
- Anti-tamper facility
- UL approved (6B)

Product Codes

515468

6B Lo Pro detector base (6”) Grinnell branded.

517.050.606

6B Lo Pro detector base (6”) Thorn Security branded. Suitable for use with LPC and Vds approved detectors

Functional Detector Bases

Functional detector bases use a common moulding which incorporates a double side circuit board which enables electrical connections to be made on the top and bottom of the functional base. This allows the functional bases to be retrofitted into new and existing universal bases or alternatively the depth and cost of the installed detector can be reduced by using the functional base instead of the universal base. This feature enables additional line isolators and sounders to be easily added during commissioning. In addition, changes to the building during it's life can be easily adapted to, by retrofitting sounders and relay outputs to existing detection points.

When functional bases are fitted to universal bases, they automatically lock into position. Removal is then achieved using the detector removal tool. This feature ensures that the detector and functional bases are removed separately.

When used on addressable systems, the MC900 takes the same address as the detector. This increases the number of devices on a loop and significantly improves fault monitoring. Any attempt to remove the functional base will generate a fault on the system.

*Datasheet - Product Code **PSF101** "M600/900 Low Profile Detector Bases"*

Manual - Vol01B-03-D2 "Detectors Fire Manual"

Tyco MKII Sounder Bases

A new low current range of sounder bases for use with Conventional and Addressable Fire Alarm Control Panels.

Features

- Manufactured to EN54 part 3
- Integral sounder and detector base
- Volume and tone adjustable after installation
- Low Power Synchronisation
- Do not require use of a standard base (maybe installed directly onto a standard besa box)

Product Codes
577.001.035
601SB Conventional Sounder Base
577.001.037
601SBD Conventional Diode Sounder Base
577.001.036
602SB 2 Wire Line Powered Sounder Base
577.001.038
602SBD 2 Wire Line Powered Diode Sounder Base
516.800.911
901SB Universal Sounder Base
516.800.912
912SB Universal UL Sounder Base

Please See Following Applications Table for Further Details.

Tyco MKII Sounder Cap

A plastic cap which fits onto the 601SB/601SBD/602SB/602SBD Sounder Base to enable these bases to operate as a sounder without fitting a detector.

Product Codes
557.001.040.A
Mark II Sounder Cap (ADT Branded)
557.001.040.T
Mark II Sounder Cap (Thorn Branded)
557.001.040.Y
Mark II Sounder Cap (Tyco Branded)

Volume Adjustment Tool

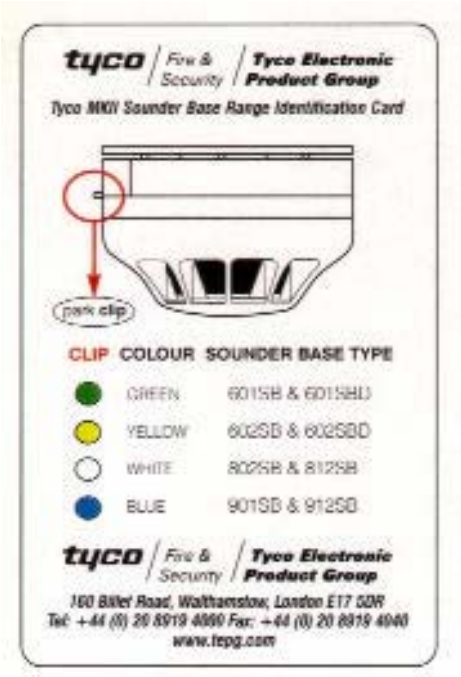
A simple Volume Adjustment Tool, specific to the task of sounder volume selection on the "variable-volume" range of Tyco MKII Sounder Base Devices.

Sounder volume can be easily varied between the maximum 90dBA and minimum 68dBA-volume settings, using this simple, functional tool.

Note: Sounder Base Devices are supplied with the volume pre-set to maximum volume.

Product Code
517.050.015
Volume Adjustment Tool

Tyco MKII Sounder Base Range Identification Card



A convenient pocket sized “quick reference card” designed to aid the identification of the Tyco MKII Sounder Base Range.

This concise card provides a simple, effective reference key for rapid identification of sounder base type during the initial visual system analysis and needs assessment.

Product Code

517.050.016

ID Cards

Note: Cards must be ordered in multiples of 100.

PART NO.	DESCRIPTION	CONTROL PANEL COMPATIBILITY	POWERED FROM	DETECTOR REQUIRED TO OPERATE	PARK CLIP COLOUR
577.001.035	601SB CONVENTIONAL SOUNDER BASE	CONVENTIONAL ONLY	24Vdc	NO	GREEN
577.001.037	601SBD CONVENTIONAL DIODE SOUNDER BASE	CONVENTIONAL ONLY	24 Vdc	NO	GREEN
516.800.911	901SB UNIVERSAL SOUNDER BASE	MINERVA ADDRESSABLE/MX	24Vdc	YES	BLUE
516.800,912	912SB UNIVERSAL UL SOUNDER BASE	MINERVA ADDRESSABLE/MX	24Vdc	YES	BLUE
577.001.036	602SB 2 WIRE LINE POWERED SOUNDER BASE	MXCE ONLY	DETECTION CIRCUIT	NO	YELLOW
577.001.038	602SBD 2 WIRE LINE POWERED DIODE SOUNDER BASE	MXCE ONLY	DETECTION CIRCUIT	NO	YELLOW

PART NO.	DESCRIPTION	CURRENT CONSUMPTION AT 68 dBA (MINIMUM VOLUME)	CURRENT CONSUMPTION AT 90 dBA (MAXIMUM VOLUME)	CURRENT CONSUMPTION AT 100dBA (FIXED VOLUME)
577.001.035	601SB CONVENTIONAL SOUNDER BASE	1.2mA	6.8mA	
577.001.037	601SBD CONVENTIONAL DIODE SOUNDER BASE	1.2mA	6.8mA	
516.800.911	901SB UNIVERSAL SOUNDER BASE	1.2mA	6.8mA	
516.800.912	912SB UNIVERSAL UL SOUNDER BASE			21mA
577.001.036	602SB 2 WIRE LINE POWERED SOUNDER BASE	1.2mA	6.8mA	
577.001.038	602SBD 2 WIRE LINE POWERED DIODE SOUNDER BASE	1.2mA	6.8mA	

PART NO.	DESCRIPTION	DUTCH SLOW SWEEP (7)	TEMPORAL 4	SLOW SWEEP (3)	MARCH TIME BEEP(25)	MARCH TIME BEEP(26)
577.001.035	601SB CONVENTIONAL SOUNDER BASE	YES	YES	YES	YES	
577.001.037	601SBD CONVENTIONAL DIODE SOUNDER BASE	YES	YES	YES	YES	
516.800.911	901SB UNIVERSAL SOUNDER BASE	YES	YES	YES	YES	
516.800.912	912SB UNIVERSAL UL SOUNDER BASE	YES	YES	YES	,	YES
577.001.036	602SB 2 WIRE LINE POWERED SOUNDER BASE	YES	YES	YES	YES	
577.001.038	602SBD 2 WIRE LINE POWERED DIODE SOUNDER BASE	YES	YES	YES	YES	

PART NO.	DESCRIPTION	FAST SWEEP (2)	TEMPORAL 3	ALTERNATING 2(11)	ALTERNATING 2 (9)	CONTINUOUS(14)	CONTINUOUS
577.001.035	601SB CONVENTIONAL SOUNDER BASE	YES	YES	YES		YES	
577.001.037	601SBD CONVENTIONAL DIODE SOUNDER BASE	YES	YES	YES		YES	
516.800.911	901SB UNIVERSAL SOUNDER BASE	YES	YES	YES		YES	
516.800.912	912SB UNIVERSAL UL SOUNDER BASE	YES	YES		YES		YES
577.001.036	602SB 2 WIRE LINE POWERED SOUNDER BASE	YES	YES	YES		YES	
577.001.038	602SBD 2 WIRE LINE POWERED DIODE SOUNDER BASE	YES	YES	YES		YES	

(2) (3) (7) (9) (11) (14) (25) (26) = ROSHNI TONE NUMBER

MC900 & 900RBA Functional Relay Base

The 900 Series relay base provides dual relay contacts for signalling external devices on addressable systems. Very low operating current even when the relay is energised, enable the relay base to be used without any additional power. On addressable systems, the dual contacts operate when the detector is in alarm OR when commanded to do so by the panel.

Features

- Dual pole 24V d.c. relay contacts (60VA)
- Status indication LED
- Very low power consumption (<20μA except start up)
- Can be used in place of a standard base

Technical Specification

Operating Temp.:	-25 to 70°C
Humidity:	Up to 96% RH (non-condensing)
Vibration:	Exceeds requirements of prEN54-3 Marine & UL268
Power Supply:	Loop/Circuit

Product Codes

568.001.016

MC900 Relay base (BS 5839)

515591

900 RBA Relay base (UL - Grinnell)

MC600 & 600RBA Functional Relay Base

The 600 Series relay base provides dual relay contacts for signalling external devices on conventional detection systems. Very low operating current even when the relay is energised, enable the relay base to be used without additional power. The relay contacts operate when the detector enters the alarm condition.

Features

- Dual pole 24Vd.c. relay contact (60VA)
- Status indicator LED
- Low power consumption (<20μA except start up)
- Latching operation
- Can be used instead of a standard base
- Requires diode fitting if used in place of an M600D diode base. Not compatible with System 1600 or T880 panels

Technical Specification

Operating Temp.:	-25°C to +70°C
Humidity:	Up to 95% RH (non condensing)
Vibration:	Exceeds requirements of prEN54-3, Marine & UL268

Product Codes

568.001.018

MC600 Relay base (BS5839)

515590

600 RBA Relay base (UL - Grinnell)

MI900 Analogue Addressable Loop Line Isolator

The MI900 incorporates the same circuitry as the LI520 MKII line isolator to provide a flexible and easily installed line isolation on MINERVA analogue addressable systems. As the line isolator is easily inserted or removed, future system changes can be implemented to suit changes in building use with minimum disruption.

Features

- Up to 12 isolators per loop
- Status indication LED
- Easily retrofitted
- Complies with BS5839

Technical Specification

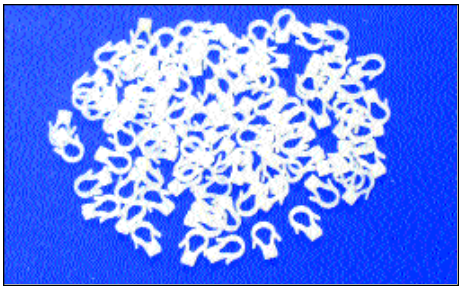
Operating Temp.:	-25 to 70°C
Humidity:	Up to 96% RH (non-condensing)
Vibration:	Exceeds requirements of prEN54-3 Marine & UL268
Power Supply:	Loop

Product Code

545.001.008

MI900 Line isolator base for use with M900 detectors on MINERVA systems (also compatible with TFX systems but not UL approved)

Detector Locking Pin Kit



Product Codes

517.050.005

M69 Detector locking pin kit (Pack of 100)

571.071

Zettler Detector locking pin kit (Pack of 100) (K07226458)

*Datasheet - **PSF101** " M600/900 Low Profile Detector Bases"*

Manual - Vol01B-03-D2 "Detectors Fire Manual"

M600/900 Detector Ancillaries

M600/900 Ancillaries

Product Codes

517.051.002 (Supplied in 10's)

M900 Smart card address key

515472 (Supplied in 10's)

900 Smart card address key (Grinnell)

517.051.402 (Supplied in 10's)

M900M Smart card address key (Marine)

Product Code

517.050.002.A

Low profile line shorting adaptor commissioning tool (shorts terminals together enabling cable resistance checks to be carried out) - ADT Branded.

Product Codes

517.050.003.A

CA600 Low profile line continuity adaptor commissioning tool (provides cable continuity through the base) - ADTbranded

517.050.003.T

CA600 Low profile line continuity adaptor commissioning tool (provides cable continuity through the base) - Thorn branded

Product Codes

517.051.007

M900F Smart card address key programmer freestanding

515474

M900F Address key programmer (Grinnell)

Product Codes

517.051.008

M900C Smart card address key programmer for use with Consys

515475

M900C Smart Card Address key programmer for TFX (Grinnell)

Product Code

540.003.006.T

Remote Indicator LED square UK single gang mounting (Thorn Branded) for use with conventional detectors.

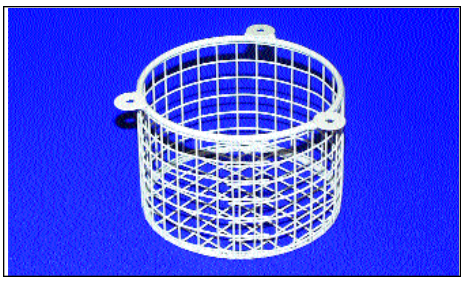
Product Codes

517.001.231

DHM69 Deckhead mounting for M600/900 series

517.001.181

DHM7 Earthing strip



Product Code

517.050.011

W500 White powder coated steel protective cage for M600/900 series detectors also suitable for most other smoke detectors. 120mm dia x 80mm deep

Duct Probe Air Sampling

MP/SMP Duct Probe Units

The MP/SMP Duct Probe Units are designed to be installed in air conditioning supply and exhaust ducts for the purpose of monitoring the airflow for smoke and combustion products.

The MP69 and SMP69 probe units are designed to accept and operate with the M600 and M900 series detectors. MP35 and SMP35 duct probe units are available for use with M300 and M500 intrinsically safe series detectors and bases. For general applications it is recommended that photoelectric smoke detectors rather than ionisation smoke detectors are used.

The SMP stainless steel probe unit is designed to withstand the more demanding environments of the offshore oil and gas industries.

The units are designed to operate in airspeeds of 1.5 to 25 metres per second. A range of sampling tubes from 450mm to 1500mm are available.

Technical Specification

Operating temperature: -20°C to +70°C

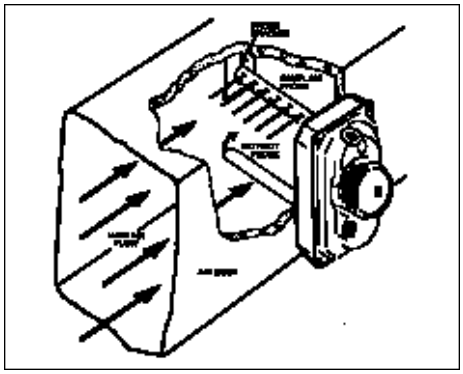
Storage temperature: -25°C to +80°C

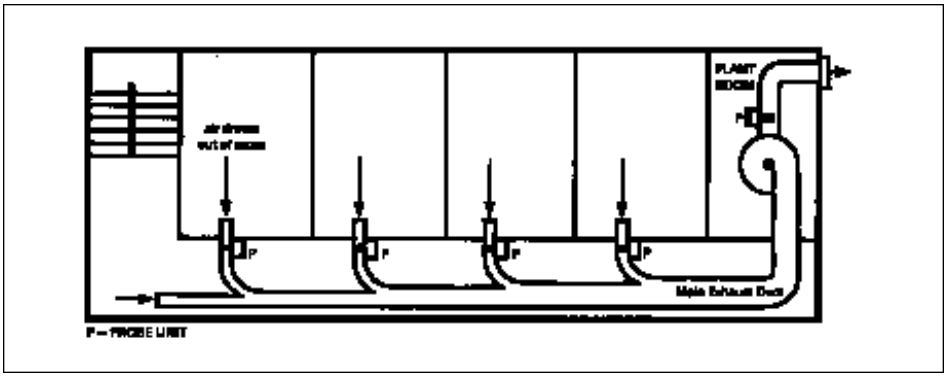
Relative Humidity: 0 to 95%

MP## "Bayblend" housing with transparent polycarbonate cover

SMP## Stainless steel 316 housing with transparent polycarbonate cover

	MP69	SMP69	MP35	SMP35
Height	90mm	90mm	116mm	116mm
Width	145mm	150mm	145mm	150mm
Length	220mm	225mm	220mm	225mm
Weight	0.58Kg	1.2Kg	0.35Kg	1Kg





Warning

Duct probe units sited in the common duct work to several extract grills may fail to respond to smoke from any one extract due to the effect of dilution. The MP/SMP units will not respond to airflow of less than 1.5m/sec.

Siting

Duct probe units should always be sited as near to the point of extraction from the room as possible and in lengthy duct work runs, at intervals along the run. Probes should be mounted at the least turbulent sections of the ducting. Avoid installation immediately behind fans, bends or work sections.

MP69 & MP35 Duct Probe Air Sampling

Product Codes

517.025.036

MP69 Duct Probe unit and base for M600/900 Series

517.025.021 *(PSF64)*

MP35 duct probe unit for M300/500 series

517.001.035

DP450 Probe Tube and exhaust

517.001.036

DP600 Probe Tube 600mm and exhaust

517.001.037

DP750 Probe Tube 750mm and exhaust

517.001.038

DP900 Probe Tube 900mm and exhaust

517.001.039

DP1200 Probe Tube 1200mm and exhaust

517.001.040

DP1500 Probe Tube 1500mm and exhaust

*Datasheet - Product Code **PSF91** "MP69 Duct Probe Unit" and **PSF64** "Series 300/400/500 Fire & Smoke Detectors"*

Manual - Vol01B-06-D1 "Detectors Fire Manual"

SMP69 & SMP35 Duct Probe Air Sampling - Stainless Steel

Product Codes

517.025.035

SMP69 Stainless Steel Duct Probe unit and universal detector base for M600/900 series

517.025.027 *(PSF64)*

SMP35 duct probe unit stainless steel for M300/500 series

517.025.028

DPS450 Probe tube stainless steel and exhaust

517.025.029

DPS600 Probe tube stainless steel 600mm and exhaust

517.025.030

DPS750 Probe tube stainless steel 750mm and exhaust

517.025.031

DPS900 Probe tube stainless steel 900mm and exhaust

517.025.033

DPS1500 Probe tube stainless steel 1500mm and exhaust

*Datasheet - Product Code **PSF92** "SMP69 Duct Probe Unit" and **PSF64** "Series 300/400/500 Fire & Smoke Detectors"*

Manual - Vol01B-06-D1 "Detectors Fire Manual"

Page 54

Aspirating Smoke Detectors VESDA - Vision Systems

VESDA LaserPLUS™, is a high sensitivity aspirating smoke detector. It provides both an early warning to facilitate intervention, and a suppression (Fire 2) signal to initiate release at an appropriate level, eliminating the need for a separate detection system. The system is modular, displays and programmers can be installed only where needed. Many VESDA products are also available from stock in German. German product codes are shown in brackets where they exist.

*Datasheet - Product Code **PSF105** "VESDA LaserPLUS"*

VESDA LaserCOMPACT™

The LaserCOMPACT detector has been specifically designed to provide all the benefits of aspirating smoke detection, including very early warning, in single small areas and where space is a premium. This has been achieved through the combination of approved LaserPLUS detection technology, dual stage filtration technology and a modified aspirator design incorporated in a smaller enclosure with simplified display. LaserCOMPACT is available in two versions, one that interfaces via relays only (RO) or across either the relays or VESDA*net*™ (VN).

Features

- Reduced size
- Absolute smoke detection
- Wide sensitivity range
- Single pipe inlet
- Simple display
- Referencing
- VESDA*net* communication (VN)
- Dual stage dust filter
- Three alarm levels
- Configurable relays
- Air flow monitoring
- Optional remote display and relay capability
- Simple mounting design
- AutoLearn™

Technical Specification

Supply Voltage:	18 to 30Vd.c.
Current Consumption:	225mA quiescent, 245mA in alarm
Dimensions:	225H x 225W x 85Dmm
Weight:	1.9Kg
Operating Temp.:	-10°C to+ 39°C
Sampled Air:	-20°C to +60°C

Product Codes

516.018.010 (561.043)
VLC-505 VESDA*net* Version (VN)

516.018.011 (561.042)
VLC-500 Relays Only Version (RO)

LaserPLUS **Standard Modular Range -** LaserPLUS **Detectors**

The detector assembly contains the laser detection chamber, high efficiency aspirator, monitored filter cartridge, control electronics, and relay interface. The detector assembly can be used as a "distributed" system, with the display, programmer and VESDA*net* socket modules mounted in a remote location. Alternatively, the detector assembly can be configured as a "self-contained" system by replacing the detector's blank panels with the display and/or programming modules.

Features

- Wide sensitivity range
- Laser-based light source
- 4 Configurable alarm levels
- Purpose built Aspirator
- 4 In-line Inlet pipes
- Flow sensor for each inlet pipe
- Wide range DC power
- Low-cost maintenance
- Dual stage filter
- Easy access to filter cartridge
- 7 Software configurable relays
- Recessed mounting
- Multiple exhausts

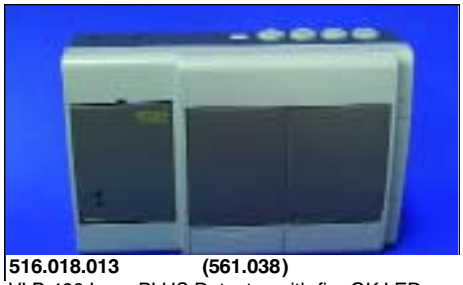
Technical Specification

Supply Voltage:	18 to 30Vd.c.
Current Consumption:	(No display or programmer) 240mA quiescent plus 50mA alarm (24Vd.c. & 3000 rpm)
Dimensions:	225H x 350W x 125D mm
Weight:	4.0Kg (including display and programmer modules)
Operating Temp.:	0°C to + 39°C
Humidity:	0-95% RH, non condensing

516.018.001 (561.036)
VLP-012 LaserPLUS Detector, programmer and display

516.018.002 (561.037)
VLP-002 LaserPLUS Detector and display

516.018.003
VLP-000 LaserPLUS Detector



516.018.013 (561.038)
VLP-400 LaserPLUS Detector with fire OK LED

Page 55

LaserPLUS **Scanners - 7 & 12 Relay Output Variants**

VESDA LaserPLUS is also available in a Scanner configuration, which allows the system to distinguish and identify the pipe carrying smoke, while sampling multiple sectors.
The VESDA LaserPLUS will continue to sample from all sectors to monitor the fire growth and maintain full protection.

Features

- Individual pipe annunciation
- Adaptive scan threshold
- Wide sensitivity range (0.005 to 20% obs/m)
- Laser based light source
- Configurable alarm levels
- Purpose built Aspirator
- 4 In-Line inlet pipes
- Flow sensor for each pipe inlet
- Low-cost maintenance
- Dual stage filter
- Easy access to filter cartridge
- Recessed mounting

Technical Specification

Supply Voltage:	18 to 30Vd.c.
Current consumption:	(No display or programmer) 240mA quiescent plus 70mA alarm (24Vd.c. & 3000 rpm)
Dimensions:	225H x 350W x 125D mm
Weight:	4.0Kg including display and programmer modules
Operating Temp.:	0˚C to + 39˚C
Humidity:	10-95% RH, non condensing
Relay Outputs:	7 or 12

516.018.004 (561.044)
VLS-214 FD7 Scanner, programmer and display with 7 relays.
516.018.007 (561.039)
VLS-314 FD12 Scanner, programmer and display with 12 relays

516.018.005 (561.045)
VLS-204 FD7 Scanner and display with 7 relays.
516.018.008 (561.040)
VLS-304 FD12 Scanner and display with 12 relays

516.018.006
VLS-200 FD7 Scanner
516.018.016 (561.046)
VLS-600 FD7 Scanner with Fire OK LED
516.018.009
VLS-300 FD12 Scanner
516.018.019 (561.041)
VLS-700 FD12 Scanner with Fire OK LED

Optional Remote Displays

A display module monitors the VESDA LaserPLUS detector. It reports a visual representation of smoke levels, and all alarm and fault conditions. The internal sounder warns personnel in the local area that an alarm threshold has been reached, or a fault has occurred.
It has a 20 segment vertical bar graph, a 2-digit numerical display, an audible sounder and clear alarm and fault indicators. It also has 4 push buttons to control the detector and the mode of the display.
Displays can be located at a convenient location - either within the detector module, or remotely on the VESDA*net*. For monitoring convenience, multiple displays can be associated with a single detector.

Scanner Displays

516.018.104
VRT-400 Remote scan display including 7 relays
516.018.107 (571.083)
VRT-700 Remote scanner display - no relays
516.018.108
VRT-800 Remote scanner display with 12 relays

516.018.103 (571.104)
VRT-300 Remote VESDA*net* socket

Detector Displays

516.018.102
VRT-200 Remote display including 7 relays
516.018.106 (571.082)
VRT-600 Remote detector display- no relays
516.018.119
VRT-J00 Compact Display c/w 7 relays
516.018.120
VRT-K00 Compact Display no relays

Features

- Four alarm levels (Alert/Action, Fire 1 & Fire 2)
- 20 segment vertical bar graph
- Alarm threshold indicators (Alert, Action & Fire 1)
- Audio and visual indication
- Alarm indicators
- Informative fault indicators
- Multi-mode numeric display(defaults to smoke obscuration)
- Acknowledged push-button presses
- Multiple language supported
- Addressable to any detector

Technical Specification

Supply Voltage:	18-30Vd.c. (when used in detector unit, Remote unit or 19” rack)
Current Consumption:	60mAquiescent plus 20mA alarm @24Vd.c. - (module only)/90mA quiescent plus 20mA alarm @24Vd.c. (in remote mounting box)
Dimensions:	150H x 140W x 90D mm
Operating Temp.:	0°C to +39°C
Humidity:	10-95% RH, non condensing

516.018.101 (571.084)
VRT-100 Remote programmer

LaserPLUS **Standard 19 Inch Sub-Rack Remote Display Assemblies**

The 19" sub-rack is available as a mounting option, with 4 mounting slots for display or programming modules.

Technical Specification
Dimensions: 128H x 482W x 120D mm

Product Codes
516.018.201
VSR-2000 19" Sub-rack with 1 detector display and 3 blanks
516.018.203
VSR-2210 19" Sub-rack, 2 detector displays, programmer and 1 blank
516.018.204
VSR-2221 19" Sub-rack with 3 detector displays and programmer
516.018.206
VSR-2222 19" Sub-rack with 4 detector displays

LaserPLUS **Components for Ordering Custom Built Remote Display Sub-racks**

Sub-rack configurations other than those available as standard can be supplied as custom built units. The sub-rack and cost of assembly are included in the VSR-CUSTOM.
The configuration of the custom built unit must be specified at time of ordering (e.g. 2 x VSU-0 and 2 x VSU-2 configured as VSR-0022)
Note: The order of the numbers (e.g. 0022) indicates the order in which the sub-units will be mounted in the sub-rack housing when looking from the front of the unit - from left to right

Product Codes
516.018.260
VSU-0 Blank Sub-unit
516.018.261
VSU-1 Programmer sub-unit
516.018.262
VSU-2 Detector display sub-unit plus 7 relays
516.018.264
VSU-4 Scanner display sub-unit plus 7 relays
516.018.265
VSU-5 Blank sub-unit with 7 relays
516.018.214
VSU-E Blank scanner sub-unit with 7 relays
516.018.268
VSU-8 Scanner display sub-unit with 12 relays
516.018.269
VSU-9 Blank display sub-unit with 12 relays
516.018.219
VSU-J Compact display sub-unit plus 7 relays
516.018.210
VSR-CUSTOM Custom sub-rack housing includes cost of custom building 4 VSU sub-rack units.

LaserPLUS **Standard 19 Inch Rack Remote Display Assemblies**

Standard rack enclosures are available to fit 2 (see picture) or 5 sub-rack assemblies.

Technical Specification
Dimensions:
020-052 400H x 600W x 220D mm
020-055 800H x 600W x 220D mm
020-050 300H x 400W x 140D mm

Product Codes
516.018.301
020-052 19" Rack enclosure (2 rows)
516.018.302
020-055 19" Rack enclosure (5 rows)
516.018.303
020-050 IP65 Enclosure

LaserPLUS **Ancillaries & Power Supply Unit**

516.018.401 (571.085)
VHH-100 Hand held programmer plus leads

A variety of other ancillaries are available. Tyco Safety Products stock pipe and sampling points.

Product Codes
517.017.005
Sampling point label
517.017.006
Aspirating pipe label
516.018.402 (571.086)
VHX-0200 PC link HLIplus leads (MK2)
516.018.403 (571.089)
VSW-004 VConfig Basic software

Available on request
VSW-005 VConfig Pro software
516.018.404 (571.090)
VSW-002 Aspire Windows software
516.018.407
VESDA 24Vd.c., 2A Power supply and charger

LaserPLUS **Spares**

516.018.504
VSP-005 Filter cartridge (spare)

The following common VESDA LaserPLUS spares are kept in stock by Tyco Safety Products. Other spares can be supplied if required.

Product Codes
516.018.501
VSP-002 Display (spare)
516.018.502
VSP-004 Scanner display (spare)
516.018.503
VSP-001 Programmer (spare)
516.018.505
VSP-019 Filter cover door (spare)
516.018.506
VSP-006 Spare detector chassis and manifold
516.018.508
VSP-008 Spare remote termination card 7 relays
516.018.509
VSP-009 Spare scanner chassis and manifold
516.018.514
VSP-014 Spare header termination card 7 relays
516.018.515
VSP-015 Spare aspirator fan

VESDA **International Language Decals**

All VESDA LaserPLUS products are currently supplied from stock in Tyco grey with English labels and software. Labels can be easily changed to any of the languages below. Alternatively, where large quantities are involved Tyco Safety Products can arrange for special delivery of pre-labelled products - extra delivery time must be allowed.

Language	VESDA Scanner	VESDA Detector
Swedish	**516.018.270**	**-**
German	**571.088**	**571.087**

Special Hazard Detectors

S200 Plus Triple IR Solar Blind Flame Detector

The MINERVA S200 PLUS flame detectors are the latest Infrared solar blind and multi-channel infra-red flame detectors with low power consumption and high false alarm immunity.

The MINERVA S200 PLUS range of advanced flame detectors is the most comprehensive range available.

Features

- Triple waveband infrared solar blind flame detection for optimum false alarm immunity
- Unrivalled black body rejection over a wide range of source temperatures
- Range adjustable to 50 metres for a 0.1m^{-2} petrol pan fire
- Discrimination of optical faults (dirty windows) from other faults by the built-in self test
- Housing designed for easy installation of cabling
- Flexible mounting and angular adjustment
- 3 x 20mm field cable entries
- IP66/67 housing designed for external use
- Rugged stainless steel ANC4 LM25 alloy housing and mounting bracket
- Operating temperature range of -40 to + 80°C
- Variable response times and sensitivity settings
- Remote self test and range setting
- True window test in detection area (i.e. not in the edge of the window)
- Terminals provided for Remote LED connection
- BASEEFA (CENELEC) certified
- Meets the requirements of EN54 Pt10
- FM, DNV and LRS certified
- Very low power consumption (0.35mA)
- Models available with Conventional or Analogue Addressable interface (requires 2 core cable only)
- Models also available with relay or 4-20mA outputs
- Patented dual filter solar blindness for complete solar blindness
- 100°field of view on IS versions
- 90° field of view on Flameproof versions

Unlike other flame detectors on the market the MINERVA S200 PLUS is available in both Intrinsically Safe (EEx ia) and Flameproof (EEx d) models.

The intrinsically safe models are suffixed by the letter " i " and meet the requirements of EN50020 part 7 and are BASEEFA certified EEx ia IIC T5. As part of an intrinsically safe circuit, it is suitable for zones 0,1 and 2 where group IIC gases or lesser hazards can be continuously present in explosive concentrations.

The flameproof models are suffixed by the letter "f" and meet the requirements of EN50018 and are BASEEFA certified EEx d IIC T6. The detectors are suitable for zones 1 and 2 where group IIC gases or lesser hazards can be intermittently present in explosive concentrations.

Technical Specification

Detector Material:	Stainless Steel 316L
Dimensions:	167H x 167W x 89D MM
Weight:	4.5Kg
Gland Entry:	3 x 20mm
Metal Parts:	Bright Stainless Steel 316 (external & internal) to BS 1449 Pt 2
Tag Label:	Stainless Steel 316
Range:	0.1m^2 petrol at 50m 0.4m^2 petrol at 60m
Response Time:	Field Selectable 3,6 and 12s
Sensitivity:	3 range settings
Relative Humidity:	95% (100% intermittent)
Enclosure to:	IP 66 and IP 67

For information on flame detector test equipment, please refer to the detector test equipment section.

Approvals

BASEEFA Approved models are suffixed ‘1’.

NSTC:	Approved
LPCB:	Approved
LRS:	Approved
DNV:	Approved
KFEIC:	Approved
SSL:	Approved
MCA:	Approved

FM Approved models are suffixed ‘2’. .

*Datasheet - Product Code **PSF102** “Minerva S200 Plus Series”*

	Interface				Approvals			
					BASEEFA		FM	Product Codes
	Conventional	4-20mA	Addressable	Relay	Ex ‘ia’	Ex ‘d’	Ex ‘d’	
S231i+	✓				✓			**516.037.004**
S231f+	✓					✓		**516.037.003**
S232f+	✓						✓	**516.037.015**
S241i+		✓			✓			**516.038.004**
S241f+		✓				✓		**516.038.003**
S251i+			✓		✓			**516.039.004**
S251f+			✓			✓		**516.039.003**
S252f+			✓				✓	**516.039.015**
S261f+				✓		✓		**516.040.002**
S262f+				✓			✓	**516.040.012**

S200 Series Test Equipment

Product Codes

592.001.016

T210 Test source for use with (**517.001.224**) Solo 704 Adaptor Tube B and Solo 100/101 Poles (**517.001.230/226)**

592.001.014

T210 Adaptor required for the T210 to be used with S200 and S200 Plus Flame detectors

*Datasheet - Product Code **PSF60** “T110/T210 Test Source”*

Manual - Vol01A-01-G1 “Detectors Fire Manual”

S111 and S121 Series Flame Detectors

The S111 and S121 (and variants thereof) are single sensor infra-red flame detectors with optical filtering, suitable for use outdoors in a wide range of applications.

Specifically designed for use in the demanding environments of the onshore petro-chemical industry, the S111 and S121 detectors incorporate an abrasion resistant sapphire window in a protective housing to meet IP65.

Features

- No false alarms from welding, sunlight or high intensity lamps
- Low maintenance costs
- Quick response to carbon fires
- Good performance (20m)
- Completely solar-blind for use outdoors
- High sensitivity with exceptional interference rejection
- BASEEFA approved EEx ia IIC T5
- Housing protection to IP65
- Integral stainless steel 316 mounting bracket
- 2 core interface to conventional fire systems
- Built in response indicator
- High immunity to smoke, dust and grime

Technical Specification

Material:	Impact resistant moulded plastic (light grey)
Dimensions:	160H x 80W x 60D mm (without bracket)
Weight:	0.6Kg
Gland Entry (S121):	1 x 20mm
Range:	0.1m² petrol at 20m 0.4m petrol at 40m
Field of View:	85° min inclusive
Response Time:	3 secs min, 5-10 secs typical
Supply Voltage:	15.5 to 25.5Vd.c.
Quiescent Current:	100μA max. at 20Vd.c.
Alarm Current:	60 mA max
Operating Temp.:	-30°C (-40°C with reduced range) to + 70°C
Storage Temp.:	-40°C to + 80°C
Relative Humidity:	95% (100% intermittent)
Enclosure to:	IP65
Classification:	BASEEFA EEx ia IIC T5 Suitable for use in zones 0,1 and 2 where group IIC gasses or lesser hazards are present in explosive concentrations.
BASEEFA Cert No.:	Ex 812333

Connections

S111 Milspec plug sealed into body

Milspec mating socket with 2m of 4 core PVC insulated, braid screened PVC sheathed cable to DEF Std 61-12 Pts 4

S121 One 4 way, 2.5 mm heavy duty terminal block

Product Codes

516.009.006

S111 Infra-red Flame detector solar blind plug and socket connection

516.009.008

S121 Infra-red Flame detector solar blind screw terminal connections

516.009.014

S121 Infra-red Flame detector solar blind screw terminal connections (Pyrotronics) FM Approved

516.009.007

S112 Infra-red Flame detector non solar blind plug and socket connection

516.009.019

S122 Infra-red Flame detector non solar blind screw terminal connections (Pyrotronics)

*Datasheet - Product Code **PSF22** "S111/121 Infra Red Flame Detector"*

Manual - Vol01A-04-D1/D2/D3 "Detectors Fire Manual"

S131 Flame Detectors

The S131 has been specially packaged in a tough GRP anti-static housing with abrasion resistant sapphire windows and protection against water ingress under sustained, high wind driven conditions. The S131 Infra-red Flame Detector uses the same optical and electronic module as the S111 and S121 detectors. It therefore has near identical performance characteristics making it completely blind to solar radiation whether direct, reflected or modulated.

Technical Specification

Material:	G.R.P. Anti-static, black
Dimension:	160H x 160W x 90D mm (without bracket)
Weight:	2.85 Kg (including bracket)
Gland Entry:	2 x 20mm
Range:	0.1m² petrol at 20m 0.4m petrol at 40m
Field of View:	90° min inclusive
Response Time:	3 secs min 5-10 secs typical

Product Codes

516.009.023

S131 Infra-red Flame detector solar blind

516.009.028

S131 Infra-red Flame detector solar blind Pyrotronics

*Datasheet - Product Code **PSF58** "S131 Flame Detector"*

Manual - Vol01A-04-D4 "Detectors Fire Manual"

S161 Flame Detector

The S161 Infra-Red Flame Detector is specifically designed to replace installed UV units using existing Ex d wiring, making replacement highly cost effective.

The S161 Infra-Red Flame Detector uses the same optical and electronic module as the S111, S121 and S131 detectors. It therefore, has identical performance characteristics making it completely blind to solar radiation whether direct, reflected or modulated. In order to meet the demands of arduous environments, such as chemical plants and off-shore oil and gas platforms, the S161 detector has been packaged in a tough G.R.P. anti-static housing, which makes it mechanically similar to the S131 detector.

Two 20mm cable entries and two 4-way terminal blocks are provided, which eliminate the need for a local junction box, reducing installation costs. When using the existing Ex'd' wiring associated with UV detectors, the use of BASEEFA certified Ex 'e' glands is mandatory.

Technical Specification

Supply Voltage:	18.0V to 24.0 V d.c. (polarity conscious)
Quiescent Current:	100μ A max. at 20V d.c.
Alarm Current:	2-wire, latching. 720 ohm in series with typically 4V switched across supply
Alarm Indication:	Red LED
Connections:	Two 4 way 2.5mm heavy duty terminal blocks
Hazardous Area:	BASEEFA Ex e s ib IIC T5. Suitable for use in zones 1 and 2 where group IIC gases or lesser hazards are sometimes present in explosive concentrations.
BASEEFA Cert. No:	EX87Y 3550

Product Code

516.009.022

S161 Infra-red Flame detector solar blind complete with built in intrinsically safe isolation.

*Datasheet - Product Code **PSF59** "S161 Flame Detector"*

Manual - Vol01A-04-D5 "Detectors Fire Manual"

S100 Series Test Equipment

Product Codes

592.001.012

T110 Test Source for use with (**517.001.224**) Solo 704 adaptor tube B and Solo 100/101 poles (**517.001.230/226**)

592.001.005

T110 Adaptor for S131/161

592.001.010

T110 PP9 Battery and Charger kit

592.001.011

T110 Carrying case (not suitable for T210)

*Datasheet - Product Code **PSF60** "T110/T210 Test Source"*

Manual - Vol01A-01-G1 "Detectors Fire Manual"

S100/200 Series Flame Detectors Mounting Bracket

Technical Specification

Weight:	1.1Kg
Dimensions:	202H x 130W x 72D mm
Construction:	SS316 to BS1449 Pt. 2
Axial Rotation:	360°
Elevation:	80°
Fixing:	M8 bolts

Product Code

517.001.184

Flame detector bracket assembly (Stainless Steel) for use with all S100/200 Series detectors

*Datasheet - Product Code **PSF76** "S200 Series Intrinsically Safe Flame Detectors"*

Omniguard 860 UV/IR and 660 UV Flame Detectors

These detectors allow UV and UV/IR flame detection to be offered where specifically specified or in the few applications where the S200 Plus Triple IR flame detector is not suitable, such as metal fires. The 860 UV/IR flame detector replaces the existing S850 UV/IR flame detector. All aluminium detectors are now available in MINERVA yellow.

Stocklisted Omniguard sensors are available with automatic self-test, latching fire relays and ¾" NPT gland conduit entries.

The Omniguard 660 and 860 Series Flame Detectors are optically based, self-contained, microprocessor controlled, ultraviolet/infrared (UV/IR) and high-speed ultraviolet (UV) flame detectors. The S860 Flame Detector utilises the patented Fire Event Analysis (FEA)™ discrimination technology. All electronics are housed within a copper-free aluminum, high temperature, TGIC-Polyester coated enclosure with a 3/4-14NPT entry. A stainless steel enclosure is also available.

The S660 and S860 Series Flame Detectors are suitable for use in Class I, Division 1, Groups B, C and D (explosion-proof) areas and Class II, Division 1, Groups E, F, and G (dust-ignition-proof) areas. The housings are NEMA 4, dust-tight and watertight. The detectors are approved for both indoor and outdoor installations.

Features

- Microprocessor Based.
- 0 to 60 seconds user adjustable time delays.
- User adjustable latching or non-latching fire relays.
- User adjustable sensitivity & NO or NC relay outputs.
- LED indication: fire (red), fault (amber).
- Transient voltage (surge) protection.
- RS485 addressable user interface.
- Two seconds or less to a 2 ft. x 2 ft. fire of JP-4, JP-8, Jet A, Jet B, AVTUR and AVGAS at 100 feet.
- Three seconds or less to a 10 ft. x 10 ft. fire of JP-4, JP-8, Jet A, Jet B, AVTUR and AVGAS at 250 feet.
- 120 degree horizontal field-of-view
- 0 to 20 mA output & Relay contacts rated at 2 Amps @ 30 Vd.c. (Resistive).

Technical Specification

Operating Temperature:	-40°F to +185°F (-40°C to +85°C)
Storage Temperature:	-85°F to +212°F (-65°C to +100°C)

Product Codes

516.060.021

Meggitt Avionics Omniguard 860 UV/IR flame detector with self test. Stainless Steel construction and 3/4" standard connection

516.060.022

Meggitt Avionics Omniguard 860 UV/IR flame detector with self test. Aluminium construction and 3/4" standard connection. Yellow finish

516.060.025

Meggitt Avionics Omniguard 660 UV flame detector with self test. Stainless Steel construction and 3/4" standard connection

516.060.026

Meggitt Avionics Omniguard 660 UV flame detector with self test. Aluminium construction and 3/4" standard connection. Yellow finish

517.060.001

4651045 Meggitt Avionics swivel bracket in black. For use with Aluminium body detectors

517.060.002

70991 Meggitt Avionics swivel bracket in stainless steel. For use with Stainless Steel body detectors

517.060.003

540 Model 540 hand held UV/IR test gun for use with 860 Series detectors

517.060.005

Airshield for Omniguard S660 and S860 Flame detectors

*Datasheet - Product Code **PSF103** "S860 UV IR Flame Detector" and **PSF104** "S660 UV IR Flame Detector"*

Intrinsically Safe Point Detectors

Features

- Conventional and addressable I.S. systems
- Suitable for worst case (EEx ia IIC T5)
- Tyco High Performance Optical (HPO) smoke detector
- Compatible with S231i+ plus flame detector
- Compatible range of I.S. callpoints

The System Designer must be familiar with BS5345, EN50 and BASEEFA certification and have successfully completed an Appropriate recognised course in Intrinsic Safety. Design of the system requires that the designer has all the information concerning the installation correctly documented. The nature of the Hazard must be defined by the customer and a survey carried out to determine the proximity of the safe area to establish cable runs.

The probability of a flammable mixture being present is defined by a Zone Number. Flammable gases are classified in Groups and their minimum spontaneous ignition temperature is categorised by Class. Tyco Safety Products supplied equipment marked EEx ia IIc T5 would be suitable for use in worst case conditions. Eg. Zone 0 (ia), Hydrogen (IIc), T5 (100 deg C). The Fire Alarm Equipment and Safety Barriers should be placed as near as possible to the containment wall of the Hazardous Area. This minimises the cable lengths between the barrier and the Hazardous Area and thus the capacity to store energy.

Technical Specification - M300/500Ex (Including base)

	MF500	MR500	MD500	MS300/MS500
Dimensions	102.6Dia x 90H	102.6Dia x 96H	102.6Dia x 89H	102.6Dia x 74.5H
Weight	0.3Kg/0.33Kg	0.3Kg/0.33Kg	0.28Kg/0.30Kg	0.275Kg
Temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-10°C to +60°C
Humidity	95% Non-condensing			

M300 BASEEF A Cert. No.: EX88B2168X

M500 BASEEF A Cert. No.: EX89C2200X

M300Ex bases are CSA Approved Certificate No.: 2017002500004454

In order that an Installation will comply with the BASEEFA certification designated for each system it is essential that the certified devices are connected with cables of the specified limits. These limits have been certified for specific classifications of hazard in order that energy storage is limited.

The number of devices connected to the barrier and located in the Hazardous Area must always be limited to not more than the listed maximum.

When a mixture of devices is connected to any one zone the numbers must be reduced in proportion to the ratio of the load presented to the barrier. When a System includes the use of either IF500Ex, S231i+ or S251i+, it must be remembered that the load they present to the circuit is twice that of a detector. A mixture of large and small load devices connected to a zone will require a calculation for the number of allowed detectors.

There are two I.S. systems used by Tyco Safety Products.

System 601 and System 602

System 601 is for use in conventional fire detection circuits, and System 602 is for use with MINERVA analogue addressable circuits. Two Sounder Systems, (one earthed and one isolated), are available and either can be used with System 601 or System 602.

*Datasheet - Product Code **PSF64** "Series 300/400/500 Fire and Smoke Detectors"*

Manual - Vol01A "Detectors Fire Manual"*

** Section is indicated next to the product code.*

Ion Chamber Smoke Detectors

The ion chamber detector [type MF501EX/MF601Ex] will respond very quickly to smoke composed of very small particles - even those invisible to the naked eye but may respond appreciably slower to dense smoke composed of large particles.

Product Codes

516.030.002 *(Vol 01A-03-D3)*

MF501Ex Analogue Addressable Ion Chamber smoke detector

516.050.004.Y *(Vol 01B-04-D10)*

MF601EX Conventional Ion Chamber Smoke Detector

High Performance Optical Smoke Detectors

The MR501TEx/MR601TEX have been developed to overcome the slower response of the optical detectors to hot burning fires, by increasing the sensitivity of the optical detector when it is associated with a rapid change in temperature. In this way it is intended to become a detector

which can cover some of the risks currently covered by ion chamber detectors. Smoke detectors will not detect burning alcohol or other clean-burning liquids which do not generate smoke particles.

Product Codes

516.031.005 *(Vol 01A-03-D11)*

MR501TEx Analogue Addressable High Performance Optical smoke detector

516.054.011.Y *(Vol 01B-04-D12)*

MR601TEX Conventional High Performance Optical Smoke Detector

Optical Smoke Detector

The photoelectric scatter type of detector [MR501Ex] will respond quickly to large particle smoke and possibly ignore the small particle smoke.

Product Code

516.031.002 *(Vol01A-03-D4)*

MR501Ex Analogue Addressable Optical Smoke Detector

Heat Detectors

If environmental conditions rule out the use of smoke detectors, then a heat detector of the type MD501Ex/MD601Ex/MD611Ex Range may provide an acceptable, though less sensitive, alternative. For general use, and particularly where the ambient temperature may be low, a 'Rate-of-Rise' heat sensor is to be preferred. This type of sensor reacts to abnormally high rates of change of temperature and provides the fastest response over a wide range of ambient temperatures. A fixed temperature limit is also incorporated in these detectors.

In many environments, e.g. kitchens and boiler rooms, sudden, large changes in temperature are considered 'normal'. Rate-of-rise detectors are generally not suitable in these cases and fixed temperature [static] types should be used.

Product Codes

516.033.002 *(Vol 01A-03-D6)*

MD501Ex Analogue Addressable Heat detector

516.052.051.Y *(Vol 01B-04-D11)*

MD601EX Conventional Rate of Rise Heat Detector

516.052.041.Y *(Vol 01B-04-D11)*

MD611EX Conventional Fixed Temperature Heat Detector

Flame Detectors

Flame detectors, unlike smoke and heat detectors, do not rely on convection to transport the fire products to the detector nor do they rely on a ceiling to trap the products. They can, therefore, be used to protect large open areas without sacrificing speed of response to flaming fires. In order to ensure full coverage, however, flame detectors do require direct line of sight to all parts of the protected area.

Infra-red flame detectors such as the MS302Ex and MS502Ex are designed to respond rapidly to fires which involve clean-burning fuels such as alcohol or methane, i.e. fires which would not be detected by smoke detectors. The MS302Ex and MS502Ex Flame Sensor, by virtue of its operating wavelength and flicker discrimination, are insensitive to normal environmental influences. For outdoor use however, or in the presence of very strong infra-red sources, a solar-blind detector [e.g. the type S200 Plus] should be used. The MS302Ex and MS502Ex Flame detectors should, normally, only be used inside buildings to supplement heat and smoke detectors.

Product Codes

516.022.001 *(Vol01A-02-D6)*

MS302Ex Infra-red flame detector

(See S100 Flame detector test equipment)

516.032.001 *(Vol01A-03-D5)*

MS502Ex Addressable Infra-red flame detector (See S100 Flame detector test equipment)

Carbon Monoxide Detector

The CO Fire detector is a unique general purpose fire detector which provides very early warning of slow smouldering fires. Ideal for sleeping risks, the CO fire detector is also well suited to many applications where heat detection is insufficient but smoke detection causes false alarms.

As CO travels more freely than smoke, the positioning of CO fire detectors is more flexible. This feature is particularly useful in large complex structures such as atria and warehouses, where positioning of smoke detectors is difficult.

Product Code

516.058.002.Y *(Vol 01B-04-D13)*

MU601EX Conventional Carbon Monoxide Detector

Enhanced Carbon Monoxide Fire & Heat Detector

The MDU601EX detector combines the features of both the MU601EX detector and the MD601EX detector to provide a combined CO and Rate of Rise Heat Detector where the sensitivity of the CO detector is enhanced in response to a fast rate of change of temperature.

Product Code

516.016.001.Y *(Vol 01B-04-D14)*
MDU 601EX Enhanced Carbon Monoxide Fire & Heat Detector

M300/500/MUBEX Detector Bases and Ancillaries

Product Codes

517.025.002
M300Ex Mounting base

517.035.002
M500Ex Mounting base

517.025.010
M300/M500 Base lock kit

517.050.610
MUBEX Mounting Base

517.025.022
MB35 Flush mounting kit for M300/400/500 series

517.035.006
M500 Protective cover

517.001.231
DHM69 Deckhead mounting kit. This deckhead mounting is also suitable for 300/500 series detectors.

517.001.120
System 601 EOL Unit (Pk 10)

Olsen T54B - Point Type Heat Detector

Constructed from stainless steel, the T54B is an extremely rugged heat detector that can be used to detect fires in the harshest of environments. The T54B can be used in environments with ambient temperatures up to 200°C and, being hermetically sealed, is impervious to most contaminants.

The T54B is suitable for use in areas with explosive atmospheres. Certified as a flameproof (Ex d) device, it can be used in Zone 1 and Zone 2 hazardous areas when installed using flameproof mounting enclosures and conduit.

Classified as a simple device, the T54B can be used in Zone 0 areas when connected to a suitable intrinsically safe barrier. For reliable operation, it is recommended that T54B detectors have set points 20°C or 20% (whichever is higher) above the maximum temperature they will be exposed to in normal operation.

Preferred factory preset temperatures are:

60, 90, 100, 145°C; normally with open contacts.

Technical Specification

Operating voltage @ 0.5A:	240Va.c. to 24Vd.c.
Switching Current:	5 to 500mA
Contact Resistance:	<1 ohm
Actuating Temp.:(factory set)	60 to 240°C
Fixed Temp. Only:	*Type E
Accuracy:	+ or - 5%
Ambient Temp.:	-40 to +270°C
Relative Humidity:	100% RH
Protection Category:	IP67
Thread Size:	M20 x 1.5mm

Product Codes

516.033.011
T4E60X T54B Point Type heat detector - 60°C

516.033.012
T4E90X T54B Point Type heat detector - 90°C

516.033.013
T4E100X T54B Point Type heat detector - 100°C

516.033.014
T4E145X T54B Point Type heat detector - 145°C

Other temperatures and normally closed contacts are available by request.

514.001.017
IF500Ex Intrinsically safe addressable interface suitable for T54B probes

*Datasheet - Product Code **PSF24** "System 601/602 for Hazardous Areas"*

H Series Heat Detectors

The and H900 range of fixed temperature heat detectors are designed to operate at 60°C and 90°C respectively. They are particularly suited to areas where rapid changes in temperature and/or high ambient temperature exist, together with unsuitable environmental conditions for smoke detectors. This makes the detectors ideally suited for galleys, laundries etc.

Features

- Approved by Marine classification authorities
- Two wire supervised circuit
- Draws no quiescent current
- Self re-setting
- Special versions can be used in any Zone 1 or Zone 2 environment
- Grade 3 to European Standard EN54 Part 5 1977

Technical Specification

Operating Voltage:	up to 24V d.c.
Quiescent Current:	zero
Alarm Current:	Limited by internal 390 ohm or 50 ohm resistor
Dimensions:	82mm dia x 41mm
Weight:	73gm
Material:	Cycolac ABS
Operating temp. range:	-20°C to +100°C
Relative Humidity:	up to 100% RH (Non Condensing)
Alarm Temp:	H6XX: 60°C
	H9XX: 90°C

Product Codes

517.001.130
DHM8 (including 2 x 20mm glands)

516.014.017
H600 60°C Fixed temp. Grade 1

516.014.021
H601 60°C Fixed temp. Grade 1 (Remote LED Ind.)

516.014.019
H602 60°C Fixed temp. Grade 1 (Integral LED Ind.)

516.014.025
H604 60°C Fixed temp. Grade 1 (Integral LED Ind.) Intrinsically Safe - Simple Apparatus

516.014.018
H900 90°C Fixed temp. Grade 1

516.014.020
H902 90°C Fixed temp. Grade 1 (Integral LED Ind.)

516.014.026
H904 90°C Fixed temp. Grade 1 (Integral LED Ind.) Intrinsically safe - Simple Apparatus

*Datasheet - Product Code **PSF108** "H Series Fixed Temperature Detectors"*

SM87BG/CP530 Explosion Proof Addressable Callpoint

The SM87BG/CP530 is based on the popular MEDC SM87BG explosion proof EEx 'd' callpoint break glass and is BASEEFA approved under the Tyco brand name with an integral CP530 addressable callpoint module suitable for use on all MINERVA 8,16E and 80 analogue addressable systems.

Technical Specification

MEDC Reference:	SM87BGLAD1R1L0NR
Material:	LM25TF Marine Grade Alloy
Certification:	EExd IIC T6
IP rating:	IP67
BASEEFA No.:	SM87 ADDRESSABLE UNIT C (A) Ex85B1037
Weight:	2.7kg
Dimensions:	122H x 122W x 105D mm
Mounting Holes:	4 x 9mm diameter (105 x 105mm centres)
Entries:	1 x M20 ISO right hand side plus 1 x M20 ISO left hand side
Text:	FIRE - BREAK GLASS
Finish:	Red Epoxy Paint
Tag label:	None fitted as standard

NOTE: *Stainless steel option available, contact Product Management Department, Sunbury for more details.*

Product Codes

514.001.055 *(Vol08A-02-D34)*
EExd MEDC SM87BG heavy duty alloy breakglass with integral CP530 potted addressable module

514.001.056
Spare glass and 'O' ring assembly for SM87BG

BG3 Weatherproof and Intrinsically Safe Conventional Callpoint

This manual fire alarm call point is designed in accordance with the latest draft European Call Point Standad (EN54-11).

Weatherproof to IP66 and available certified intrinsically safe, simple apparatus or uncertified, the units are manufacured from glass reinforced polyester (GRP) which provides a robust, corrosion free construction and ensures effective and reliable operation in harsh industrial and offshore environments.

Units are supplied in self coloured GRP with a 'Burning House' duty label as standard.

Product Codes

514.001.059
Intrinsically Safe Callpoint (BG3I4NBN)

514.001.061
Simple Apparatus Callpoint (BG3W4NBN)

514.001.058
Weatherproof Callpoint (BG3W4LBN)

MODEL	BG3I	Simple Apparatus/BG3W
PROTECTION	Explosion Protected EExia (Intrinsically Safe)	Dust-tight & Weatherproof
CERTIFICATION	CENELEC EN50014, 020 BASEEFA EExia IIC T4 Cert No. BAS00ATEX1067X Suitable for use in Zones 0,1, & 2	Not Applicable
VOLTAGE	Up to 28V (IS)	Up to 250 V a.c.
CERTIFIED TEMPERATURE	-55°C TO +55°C	Not Applicable
INGRESS PROTECTION	IP66	IP66
EUROPEAN STANDARD FOR CALLPOINTS	EN54-11	EN54-11
TERMINALS	6 X 4.0mm²	6 X 4.0mm²
SWITCH RATINGS	Not Applicable	DC: 0 - 30V 3A resistive or inductive 30V - 50V 1A resistive or inductive AC: 0 - 250V 3A resistive or inductive
CABLE ENTRIES	2 X M20 Top or Bottom	2 X M20 Top or Bottom
WEIGHT	0.5Kg	0.5Kg
MATERIAL	UV resistant glass reinforced polyester	UV resistant glass reinforced polyester
FINISH	Natural Red GRP	Natural Red GRP

Intrinsically Safe Callpoints

A variety of Ex 'ia' Intrinsically safe callpoints are available as standard using KAC and MEDC callpoint housings.

The CP220Ex is a conventional callpoint for use on BASEEFA Certified System 601. System 601 is compatible with MINERVA 1 to 4, System 1700, NT & MINERVA Addressable DM modules.

The IF500Ex is an Intrinsically safe addressable interface module.

It can be used to interface simple apparatus to MINERVA analogue addressable systems, designed to BASEEFA Certified System 602.

The IF500Ex can interface to devices such as 'H' Series detectors & T54B heat probes. In addition the CP540Ex is specifically designed for use with the IF500Ex. The IF500Ex is fitted inside the CP950Ex and the IF520Ex and BASEEFA Certified as integrated units.

	CP220Ex	CP540Ex	CP950Ex	IF520Ex	IF500Ex
Dimensions(H x W x D mm)	87 x 87 x 51.5	87 x 87 x 51.5	126 x 120 x 118	122 x 122 x 118	122 x 120 x 90
Weight	200g	200g	1.2Kg	4.1Kg	900g
Material	Polycarbonate	Polycarbonate	Polyester	Stainless Steel	Polyester
Conventional	Yes	No	No	No	No
Addressable	No	Requires IF500Ex	Yes	Yes	Yes
Colour	Red	Red	Red	Red	Grey
BASEEFA Cert.	Simple Apparatus	Simple Apparatus	89C2202	89C2202	89C2202
IP Rating	IP67	IP67	IP66 & 67	IP66 & 67	IP67
Note: Variants are available on request					

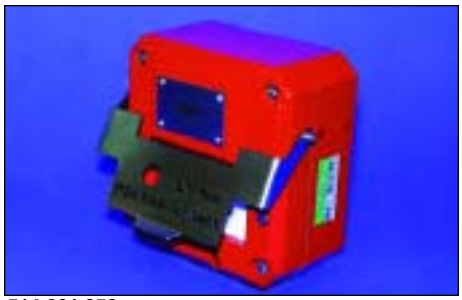
*Datasheet - Product Code **PSF24** "System 601/602 for Hazardous Areas"*

Manual - Vol08A-02-D11/D31/D32 "Ancillaries Manual"

514.001.009
CP220Ex Red Callpoint intrinsically safe for use with BASEEFA certified conventional system 601. Simple apparatus marking

514.001.023
CP540Ex Red callpoint intrinsically safe for use with IF500Ex. Simple apparatus marking

514.001.017
IF500Ex Intrinsically safe addressable interface module. May be used to interface simple apparatus switch callpoint to MINERVA analogue addressable system. For use on BASEEFA certified System 602



514.001.052
CP950Ex MEDC weatherproof intrinsically safe callpoint with integral analogue addressable module

514.001.053
IF520Ex EExia MEDC SM87PB Stainless steel heavy duty intrinsically safe callpoint push button with integral IF500Ex analogue addressable module

Product Codes

515.001.041

Spare key for IF520Ex callpoint and other SM87PB models

517.001.120

System 601 EOL Unit (PK10)

Intrinsically Safe Barriers and Housings

The following section relates to a range of intrinsically safe barrier and isolator equipment for use with Tyco Safety Products manufactured fire detection systems. It essentially encompasses the relevant MTL 5000 and MTL 7000 series barriers plus the associated housing options as an alternative to existing MTL 700 and MTL 3000 series equipment.

On all issues of intrinsically safe systems design, please refer to Manual 26A for guidance.

*Datasheet - Product Code **PSF24** "System 601/602 for Hazardous Areas"*

Manual - Vol026A-02-D1 "Intrinsically Safe Systems 601 & 602 Manual"

Galvanic Barriers

MTL 5000

The MTL 5061 is a two channel interface for use with conventional fire and smoke detectors located in hazardous areas. This galvanic isolator is CE marked, and replaces the MTL 3043 barrier option. It is suitable for connecting loads in Zone 0, IIC, T4-6 hazardous areas if suitably certified.

The MTL 5021 Isolating sounder driver enables an intrinsically safe sounder device located in the hazardous area, to be controlled from the safe area. The MTL 5021 barrier is designed as a CE marked replacement for the existing MTL 3021 barrier. It has one channel and is suitable for connecting loads in Zone 0, IIC, T4-6 hazardous area if suitably certified.

When designing new systems or upgrading existing MTL 3000 series systems to MTL 5000 series, please use the appropriate MTL "DX" series enclosure equipment.

Product Codes

517.001.244

MTL 5061 2 channel galvanic isolator for conventional detector zone - used on BASEEFA Approved System 601

517.001.245

MTL 5021 I.S. Sounder driver

MTL 3000

The MTL3000 series interface units offer a compact and easy-to-use means for communicating safely with conventional fire detectors and output devices in the hazardous area. The MTL3000 solution provides an alternative to the shunt-diode safety barrier where isolation is essential or preferred or a high integrity earth is not readily available.

The MTL 3021 enables the intrinsically safe sounder type IS28 (576.501.013) to be activated from the safe area. An absolute maximum of 4 off I.S28 sounders may be connected to each MTL3021 unit.

The MTL 3043 is used primarily with intrinsically safe conventional type (M300 series, H600 series, S100 series, S231i+) automatic fire detectors and the CP220Ex intrinsically safe callpoints. The MTL3043 is not suitable for use with addressable fire detectors. For application guidance, refer to the relevant documentation for system 601 and system 602.

Product Codes

517.001.204

MTL3043 Galvanic Isolation safety barrier

517.001.203

MTL3021 Galvanic Isolation safety barrier

Zener Barriers

MTL 7100

The MTL 7100 Series intrinsically safe shunt-diode safety barriers are innovative devices designed to provide exceptionally high packing densities, straightforward installation and simplified connection, commissioning and maintenance facilities. The MTL 7100 Series include secondary replaceable fuses. These are useful where there is the possibility of faults occurring during commissioning, which would otherwise blow the barriers' internal safety fuses.

One secondary replaceable fuse for each barrier channel is provided and is lower in value than the safety related fuse. Fuses are packaged in small mouldings which can be latched in a disconnect position to break the safe and hazardous areas during commissioning, maintenance and fault finding, thus avoiding the need for additional disconnect terminals.

Please note that this barrier is a direct alternative for the MTL 728+ barrier. Currently, there is no direct alternative for the MTL 788+ barrier used with the MINERVA addressable system. So addressable MINERVA systems must use the existing MTL 788+ barrier and associated housing option.

Product Code

517.001.246

MTL 7128+ Zener safety barrier for conventional detection circuits designed in accordance with System 601

MTL 700

The MTL700 series are 1 or 2 channel devices which pass the electrical signal from fire detectors to the control panel or from the control panel to the output device. The barriers limit the amount of energy to a level that cannot ignite explosive atmospheres. The over-voltage protection provided by a Shunt-Diode Safety Barrier is with reference to the safety barrier earth connection. It is therefore imperative that a HIGH INTEGRITY EARTH is used for this type of barrier.

Product Codes

517.001.201

MTL728 Single Channel Zener Safety Barrier.

517.001.202

MTL788 Dual Channel Zener Safety Barrier.

546.004.005

Intrinsically safe sounder circuit interface module

Safety Enclosures

DX Series Enclosures

The MTL 'DX' Series enclosure equipment is designed to house MTL 5000 isolating interfaces and MTL 7000 series shunt diode safety barriers. Enclosures are usually selected on the number of units they will accommodate. The following table shows the capacity of each of the enclosure types.

Enclosure	MTL5000 Isolators 16mm Pitch	MTL7000 Barriers 7.5mm Pitch
DX070	4 (2*)	9 (5*)
DX170	10 (8*)	22 (18*)

* Use these figures when two IMB57 mounting brackets for tagging/earth rail accessories are included

ProductCodes

517.001.248

DX070 Enclosure MTL 5000/7000 series barriers

517.001.247

DX170 Enclosure for MTL5000/7000 series barriers

UC Series Enclosures

The UC series of enclosures provides a simple but effective means of mounting and protecting the MTL3000 series units, in safe areas. A standard lightweight enclosure with transparent lid, which can accommodate 4 units. The polycarbonate enclosures are impact resistant, flame retardant, and dustproof to IP65.

ProductCode

517.001.196

UC2 4, Way Barrier housing

MT Series Enclosures

The MT series of enclosures provides a simple, effective means of mounting and protecting MTL700 Series barriers in safe areas or low-risk hazardous areas. Three lightweight polycarbonate enclosures with see through lids accommodate up to 2, 5 and 12 barriers in the safe area. All the enclosures are supplied ready fitted with a nickel plated brass busbar mount, so barriers can be installed and wired up immediately without special tools.

Product Codes

517.001.198

MT2 2,Way Zener Barrier Housing.

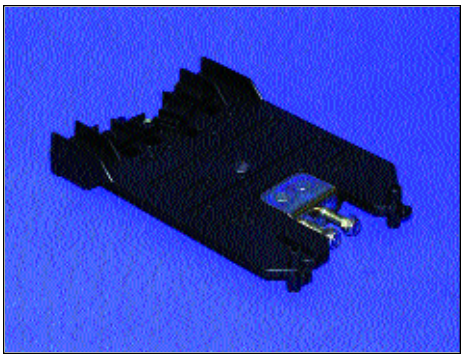
517.001.199

MT5 5,Way Zener Barrier Housing.

517.001.200

MT12 12,Way Zener Barrier Housing

Ancillaries



The ERL7 earth rail is a nickel plated 3 x 10mm rail (1 metre long), suitable for a do-it-your self mounting arrangement. It will accommodate up to 2.5 ETM7 earth terminals per barrier location for terminating earth returns and cable screens from the hazardous area.

The IMB7 mounts on a flat surface or top hat rail (35mm) or G-profile rail and acts as a convenient method for mounting the earth busbar.

Product Codes

517.001.205

ERL7 Earth rail I.S. systems

517.001.206

ETM7 Earth termination connection system

517.001.207

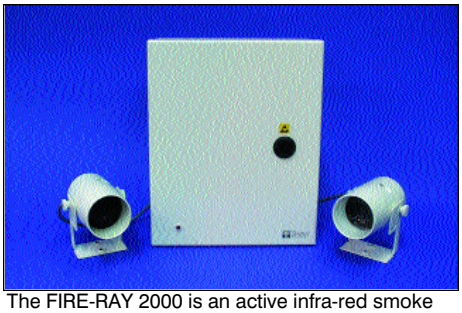
IMB7 Insulating mounting block

517.001.120

System 601 EOL Unit (PK10)

Beam and Linear Heat Detectors

Optical Beam Smoke Detectors



The FIRE-RAY 2000 is an active infra-red smoke detector. The system comprises of three base elements i.e. a transmitter, receiver and Control Unit. Analysis of the modulated infra-red beam by the Control Unit determines whether smoke is present, and if so generates an alarm signal.

Features

- Range 5 metres up to 100 metres
- Area coverage up to 1400m²
- Selectable sensitivity
- Self-check and automatic compensation
- Manual or automatic reset
- Optional MINERVA loop powered interface module (LPBD 521)
- Suitable for both conventional and addressable fire systems
- Fire/fault interface to MINERVA controller
- Low current consumption
- Flexible system design options
- Robust metal construction
- Designed to conform to BS5839 Part 5

Product Codes

516.015.006.A

FireRay2000 optical beam smoke detector

VdS approved, ADT Branded

516.015.006.T

FireRay2000 optical beam smoke detector

VdS approved, Thorn Branded

920450

FireRay2000 -UL Optical beam smoke detector - UL approved

516.015.007

FireRay2000 Retro-Reflector 100 x100mm

516.015.008

FireRay2000 Alignment tool

Spares

515484

FireRay2000 Spare Transmitter

515485

FireRay2000 Spare Receiver

515487

FireRay2000 Spare Main PCB

*Datasheet - Product Code **PSF85** "Fireray 2000 Optical Beam Smoke Detectors"*

Manual - Vol08A-02-D26 "Ancillaries Manual"

Technical Specification

	Dimensions(mm)			Weight
	Height	Width	Depth	(Kg)
Transmitter/Receiver	95	75	115	0.4
Control Unit	260	210	80	2.25
LPBD521 (with M520 encl.)	87	148	14	0.1

Voltage Range-	Fireray 2000	+11.5 to +28Vd.c.
	LPBD521	28V Loop Power
Fireray 2000 Quiescent Current		<13mA
Fireray 2000 Alarm Current		<20mA

Operating Temp. Range -	Fireray	-10°C to +55°C
	LPBD521	-20°C to +70°C
Humidity (Fireray 2000 & LPBD521)		up to 95% RH (Non-condensing)
Fireray 2000 Enclosure		IP54

Fire-Ray 50/100R

The FIRE-RAY 50/100R is a reflective infra-red beam smoke detector. The system comprises of two base elements i.e. a combined infra-red transmitter and receiver in a common housing and a reflective prism. The electronics of the combined transmitter and receiver unit analyse the reflected beam from the prism for smoke and generates an alarm condition if a pre-determined level is reached.

Features

- Range 5 to 50 metres (50R)
- Range 50 to 100 metres (100R)
- Area of coverage up to 750m² (50R), 1500m² (100R)
- Selectable sensitivity
- Self-check and automatic compensation
- Manual or Automatic Reset
- Optional MINERVA loop powered interface module (LPBD521)
- Suitable for both Conventional and Addressable Systems
- Fire/Fault Interface to the Minerva Controller
- Low current consumption
- Flexible System Design Options
- Robust ABS Construction
- Designed to Conform to BS5839 Part 5, EN54 Part 12, UL and VdS

Product Codes

516.015.011

Fire Ray 50R 5 to 50 Metre Reflective Beam Detector

516.015.012

Fire Ray 100R 50 to 100 Metre Reflective Beam Detector

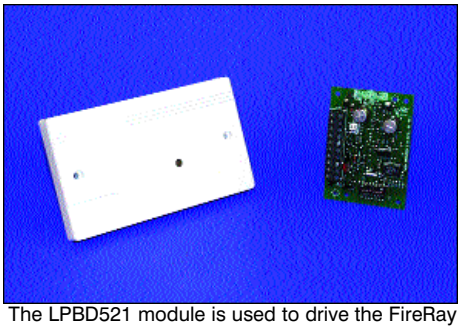
Technical Specification

	Dimensions(mm)			Weight
	Height	Width	Depth	(Kg)
Transmitter/Receiver	210	130	120	0.7
LPBD521 (with M520 encl.)	87	148	14	0.1

Voltage Range -	Fire Ray 50/100R	+10.2 to +30Vdc
	LPBD521	28V Loop Power
Fire Ray 50/100R Quiescent Current		<4mA @ 24Vdc
Fire Ray 50/100R Alarm Current		15mA

Operating Temp Range -	Fire Ray 50/100R	-30°C to + 55°C
	LPBD 521	-20°C to + 70°C
Ingress Protection (Fire Ray 50/100R)		IP50

LPBD521 - Loop Powered Beam Detector Module



The LPBD521 module is used to drive the FireRay 2000 beam detector units directly from the MINERVA loop. A single LPBD521 can be used to power the analyser unit, the beam receiver unit and the transmitter unit. Alternatively, two separate LPBD521's can be used with one to power the analyser unit and receiver units and the second to drive the transmitter separately, either from the same loop or a different loop. Up to 12 LPBD521's can be used per loop.

The module is addressable and will therefore take one address on the loop.

Technical Specification

Powered:	Loop
Temperature Range:	-20°C to+70°C
Operating Humidity:	up to 95% RH non-condensing
Dimensions (PCB):	60H x 84W x 14D mm

Product Code

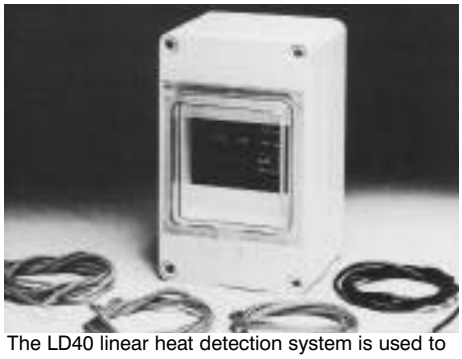
557.180.217

LPBD521 loop powered beam detector interface module for use with FireRay 2000

*Datasheet - Product Code **PSF85** "Fireray 2000 Optical Beam Smoke Detectors"*

Manual - Vol08A-02-D26 "Ancillaries Manual"

Linear Heat Detection



The LD40 linear heat detection system is used to monitor fire (or overheat) conditions in confined or polluted areas or where there are adverse or unusually variable environmental conditions. The sensor cable is unaffected by dust, moisture or vibration and requires little maintenance.

Features

- Easy and cost effective installation
- Good sensitivity with adjustable alarm threshold
- Open and short circuit monitoring
- Suited for outdoor and indoor applications
- Can be used in hazardous areas
- Mechanical protection is provided for cables in areas where damage may occur
- Chemical resistance sheathing is available for areas where petro-chemical corrosion may occur.

Technical Specification

Dimensions:	170H x 105W x 111D mm
Weight:	0.55Kg
Operating Temp:	-25°C to +70°C
Relative humidity:	Up to 98% RH non-condensing
Rating:	IP55
Operating Voltage:	+8 to +30Vd.c.
Quiescent Current:	60-80μA

Product Codes

516.016.005

LD40 High resistance sensor cable blue - 200M reel

516.016.006

LD40 High resistance sensor cable black - 200M reel (Nylon sheath suitable for petrochemical exposure)

516.016.010

LD40 EOL Termination kit

516.016.011

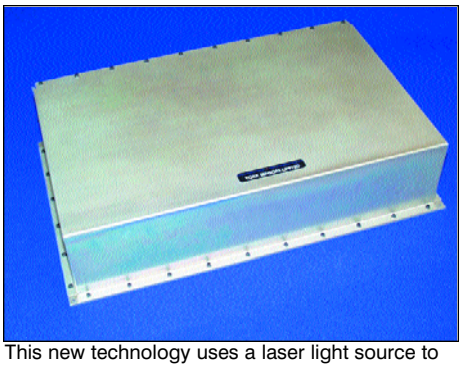
LD40 In-line Jointing kit

516.016.012

LD40 Analyser module with conventional detection zone interface. Requires a DM520 or similar zone module interface to MINERVA/TFX addressable loops

*Datasheet - Product Code **PSF42** "LD40 Linear Heat Detection System"*

MXF Optical Fibre Temperature Sensing



This new technology uses a laser light source to launch light signals into an optical fibre. As pulses travel down the fibre, energy is lost through scattering. A fraction of the scattered signal is retained within the fibre. A portion of this is directed back along the fibre towards the laser source - this signal is called backscatter. Part of the back scatter signal (Raman Scattering) is used to provide accurate remote temperature measurements at hundreds of points along the fibre.

The MXF100 uses standard communications grade optical fibre of the 62.5/125 graded index multimode type. The temperature range is predominantly a function of the coating used to protect the optical fibre as the fibre itself is well behaved over a temperature range from -50°C to approximately 300°C.

Optical fibre itself offers several advantages as a sensing medium. The signals are immune to electromagnetic interference thereby ensuring integrity of readings from electrically noisy areas. As no electrical current is used in the sensing fibre and the fibre is relatively inert and dielectric (non-conducting) medium, it is safe technology to use in hazardous environments.

Features

- Fibre optic sensor loop up to 2km
- Continuous temperature profiles of temperature on a PC
- Programmable functions
- Programmable number of fire detection zones
- Multiple and programmable Alarm levels per fire detection zone
- Variable rate of rise function
- Unrivalled response times
- Optional outputs
- Modbus Serial Data
- Direct to PC
- Volt free contacts
- Insensitive to EMI
- Intrinsically safe sensor
- Uses standard communications grade optical fibre
- Choice of cable construction
- Cable construction for extreme environments
- High System Integrity
- Automatic failure mode analysis
- Loop break recovery operation
- Diagnostic capability
- Fire progression monitoring
- No cable maintenance
- Modem for remote communications

Technical Specification

The MXF100 system complies with:

- EMCDirective 89/336/EEC
- Low Voltage Directive 72/2/EEC

The MXF100 contains a Class 3a Laser product and complies with:

- BS7192 (1989)
- American National Standard Z136.2 (1988)
- International Electrotechnical Commission Standard 825 (1990)

Supply Voltage:	24V d.c. (-6/+12V d.c.)
Power Consumption:	20W max
Supply Current:	<1A
Fuse Rating:	<2A (anti-surge)
Fibre:	62.5/125 graded index multi-mode
Operating Temp.:	0°C to +40°C
Storage Temp.:	-40°C to +65°C
Humidity:	0 to 95% RH (non-condensing)

Product Codes

516.016.111

MXF100 Fibre Optic Linear Heat Detection control unit c/w 3 tier wall mounted cabinet and PSU.

516.016.112

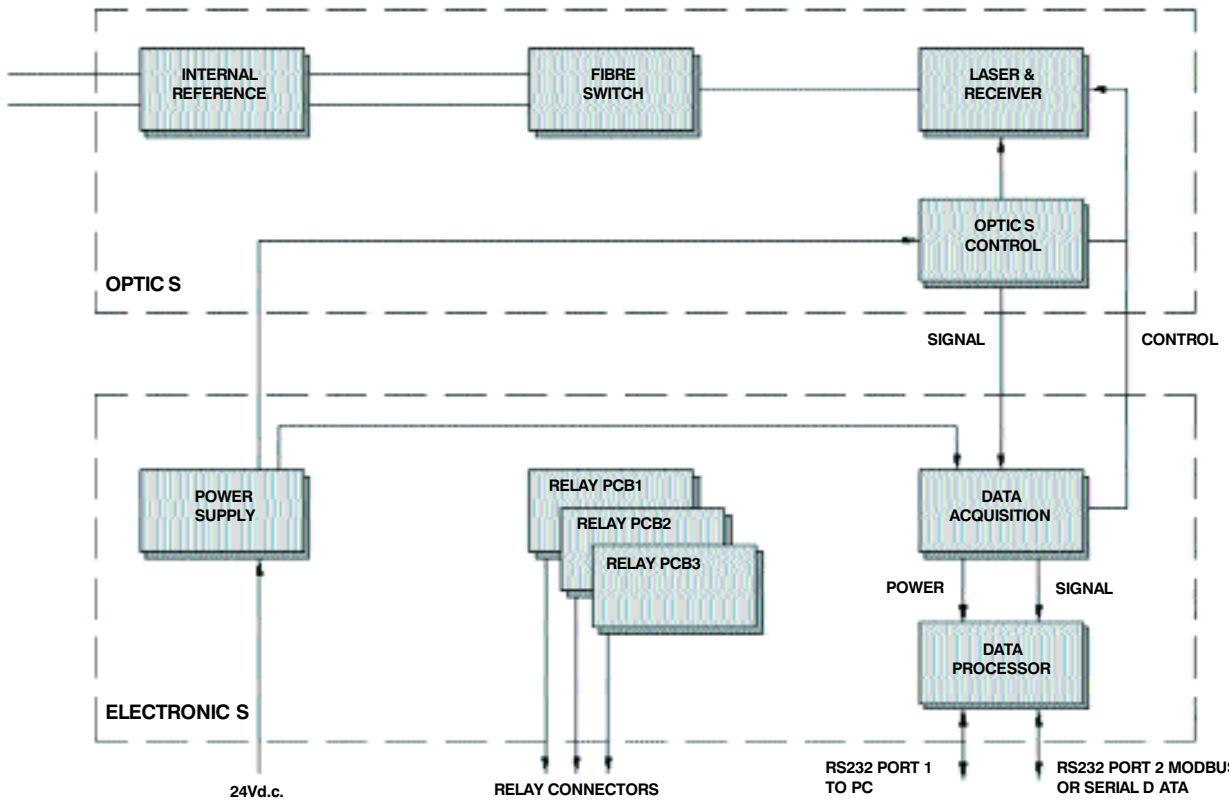
MXF-SL Sensor Line Thermoplastic sensor cable (1km reel)

516.016.113

MXF-SS Sensor Tube Stainless Steel Sensor Cable (1km reel).

*Datasheet - Product Code **PSF111** "MXF100 Optical Fibre Temperature Sensing Technology"*

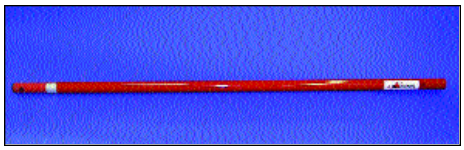
MXF100 FUNCTIONAL BL OCK DIAGRAM



Detector Test Equipment

Point Detector Testing/Commissioning Equipment

Manual - Vol01A & Vol01B "Detectors Manual"



Product Codes

517.001.230

SOLO100 Telescopic pole 1.26M to 4.5M long

517.001.226

SOLO101 Extension tube 1.13M long for use with **517.001.230** Telescopic extension pole

517.001.264

SOLO 610 Protective Carry/Storage Bag for Solo Detector Test Kit

Product Code

517.001.255

SOLO330 Aerosol dispenser for use with all detector ranges. Connects directly to SOLO100/101 poles

Product Codes

517.001.254

SOLO461 Cordless heat detector tester kit including SOLO460 tester, SOLO720 battery batons and SOLO724 charger. (Connects directly to SOLO100/101 poles).

517.001.242

SOLO720 Spare battery baton for use with SOLO 450/460 tester

517.001.243

SOLO724 Spare mains/car battery charger for SOLO720 battery baton

Product Code

517.001.256

Suretest Solo aerosol tester can. For use with SOLO 330 dispenser. Non-flammable, ozone and environment friendly. Approx 200 tests per can

Product Code

517.050.004

M69 Detector changer for use with M600/M900 series. Requires Adaptor B and SOLO 100 pole

Product Codes

517.001.233

CO Detector field test kit with 24 brickets for use with SOLO 330

517.001.234

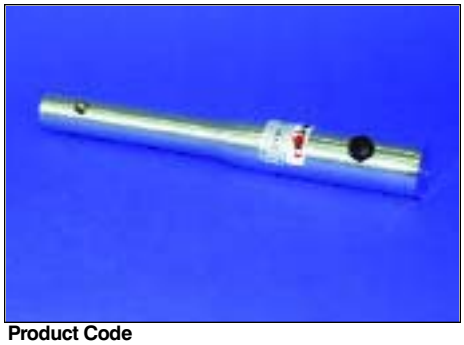
CO Fire detector field test kit spare bricks

(Pack of 24)

Product Code

517.025.026

T35 Skirt changer tool for use with M300/400/500 series requires Adaptor B and SOLO100 pole



Product Code

517.001.224

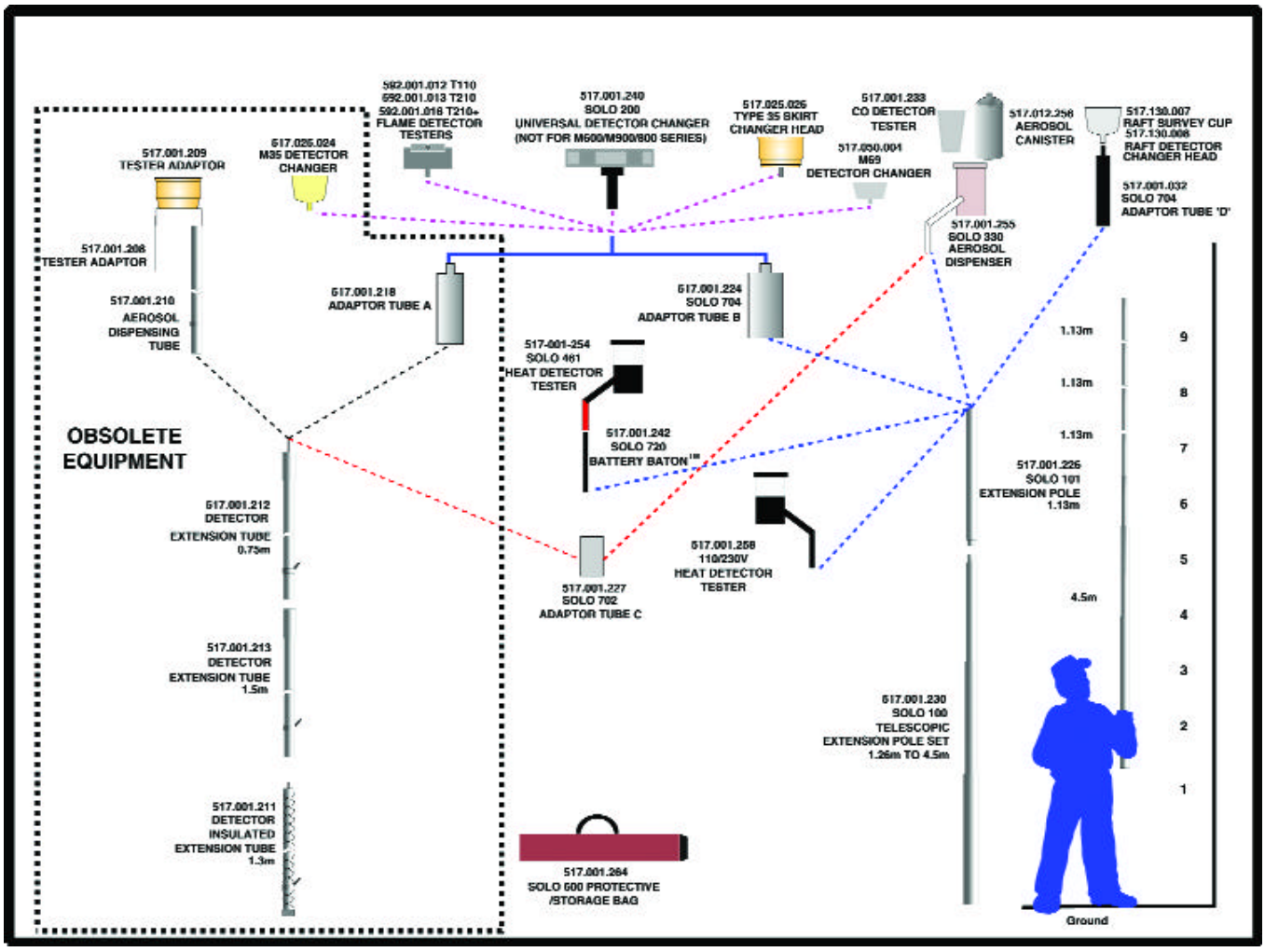
SOLO704 Adaptor tube B - Adapts SOLO100/101 pole sets for TYCO detector changers and testers

Product Code

517.001.240

SOLO200 Universal detector changer for use with various manufacturers detectors - not suitable for M600/900 series low profile. Connects directly to SOLO100/101 poles

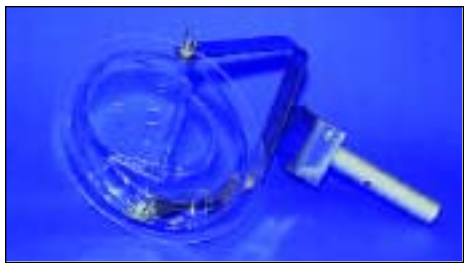
SOLO TEST EQUIPMENT FOR POINT & FLAME DETECTORS



S200 Series Test Equipment

592.001.016

T210 Test source for use with (**517.001.224**) SOLO 704 Adaptor Tube B and SOLO100/101 poles (**517.001.230/226**)



592.001.014

T210 Adaptor for S200 Detectors

S100 Series Test Equipment

592.001.012

T110 Test Source for use with (**517.001.224**) SOLO 704 Adaptor Tube B and SOLO100/101 poles (**517.001.230/226**)

592.001.010

T110 PP9 Battery and Charger kit

592.001.011

T110 Carrying case (not suitable for T210)

592.001.005

T110 Adaptor for S131/161 Detectors

CP Series Callpoints

A comprehensive range of callpoints for use with both conventional and addressable systems. All the callpoints are designed to enable an alarm signal to be given by breaking a glass element, this operates a switch and is indicated by an LED indicator. If required, an optional transparent hinged cover may be installed to guard against accidental operation.

Features

- Integral LED indicator for easy identification of operation
- Surface or flush mounting
- Extensive range of conventional and analogue addressable callpoints
- Test key facility, speeds maintenance visits
- Optional transparent hinged cover
- Hazardous areas models available (See Special Hazards Section)
- IP66 Waterproof models for external applications

Technical Specification - *(Indoor & Outdoor)*

Housing: Modified Polyphenylene Oxide[Noryl SE100]
Operating Temp.: -20°C to +70°C
Relative Humidity: up to 95% RH (non-condensing)

*Datasheet - Product Code **PSF36** "CP200 Series Break Glass Detectors"*

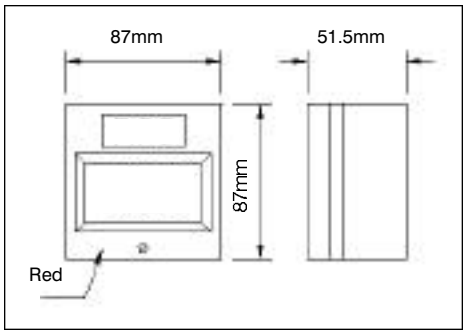
Manual - Vol08A-02-D9/D10/D27 "Ancillaries Manual"

Commonly Used Callpoints

Model	Colour	Type	IP Range	R1/R2 Ohms
CP200	Red	Conventional Alert	44	120/470
CP210	Red	Conventional Evacuate 44		49/39
CP230	Red	Conventional Alert	66	120/470
CP270	Yellow	Conventional Evacuate 44		47/39
CP920	Red	Addressable	44	Not Applicable
CP930	Red	Addressable	66	Not Applicable
CP937	Red	Addressable	55	Not Applicable
Keyswitch	White	Conventional	44	Not Applicable

Callpoint Dimensions

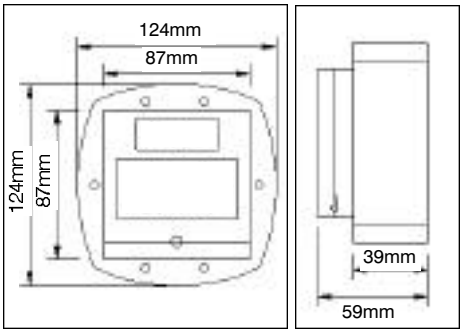
Indoor Callpoint
Weight: 200g



Although the callpoint can be fitted on a 16mm deep box this leaves little room for the conductors: A 25mm deep box is recommended.

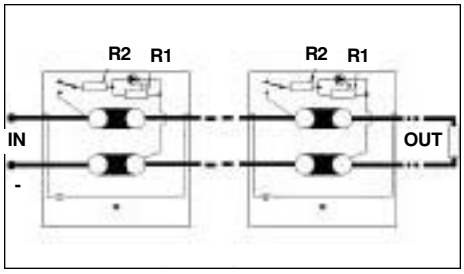
Note: Contacts rated at 32Vdc @ 100mA

Outdoor Callpoint (IP66)
Weight: 400g

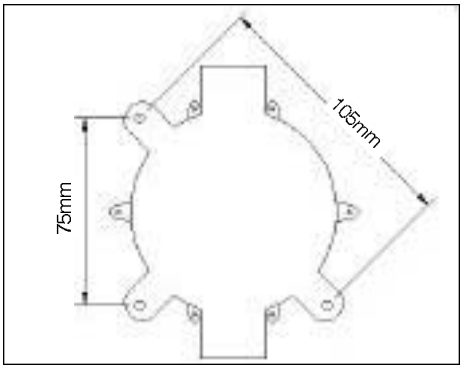


Conventional Callpoints

Typical Conventional Wiring

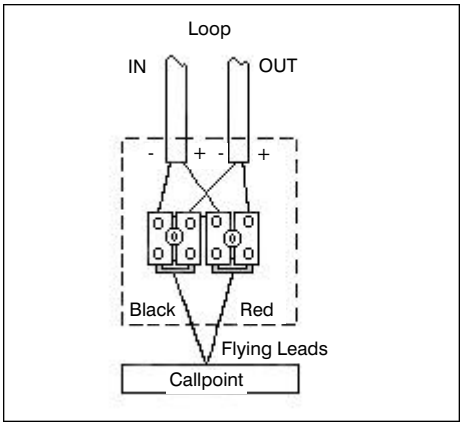


Typically the conventional callpoint devices draw no current in the 'off' state, but when activated, will present an alarm load to the fire detection control panel. The alarm load is defined by the internal resistance arrangement for the device.



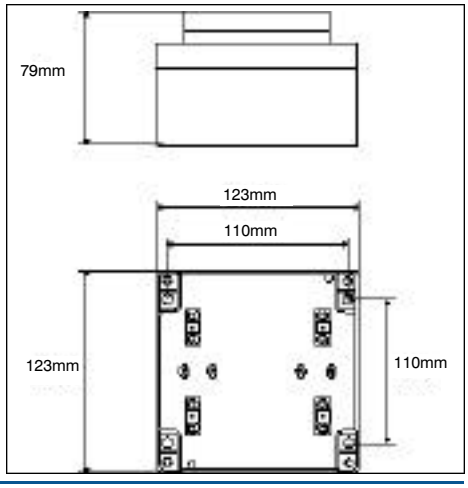
Addressable Callpoints

Typical Addressable Wiring



Addressable callpoints contain an address unit enabling connection to the MINERVA Addressable range of fire controllers. The address unit includes a custom chip and a 7-way DIL Switch which is used to define the address of the callpoint.

Outdoor Callpoint (IP55)



Conventional CP200 Callpoint

The CP200 is a red indoor callpoint with 'alert' resistors and LED indicator. The CP200 is LPCB approved.

Product Codes
514.001.042.T
CP200 without backbox - Thorn Security branded lid
514.001.042.Y
CP200 without backbox - Tyco branded lid
514.001.057
CP200E without backbox, European 'Fire' marking and glass, unbranded lid
514.001.006
CP200A complete with surface backbox. Arabic text. Thorn Security branded
514.001.042.A
CP200 without backbox-ADT branded lid
90-110
Standard KAC KR-1 Flush Callpoint (No resistors fitted)
70-133
Standard KAC KR72-680 Flush Callpoint (680 Ohms resistance)

Conventional CP210 Callpoint

The CP210 is a red indoor callpoint with LED indicator and evacuate resistors. The CP210 is LPCB approved and is supplied without a backbox.

Product Codes
514.001.043.A
CP210 ADT branded
514.001.043.T
CP210 Thorn Security branded
514.001.043.Y
CP210 Tyco branded

The CP211 is a red indoor callpoint with evacute resistors and LED indicator. (For use with the MXC/MXCE Panels only).

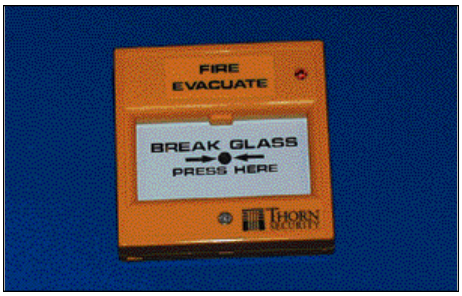
514.001.060.T
CP211 Without backbox - Thorn Security Branded Lid
514.001.060.Y
CP211 Without backbox - Tyco Branded Lid
514.001.060.A
CP211 Without backbox - ADT Branded Lid

Conventional CP230 Callpoint

The CP230 is an IP66 red weatherproof callpoint with LED indicator and LPCB approved.

Product Codes
514.001.010.A
CP230 ADT branded
514.001.010.T
CP230 Thorn branded
514.001.010.Y
CP230 Tyco branded

Conventional CP270 Callpoint



Product Code
514.001.014
CP270 Yellow callpoint 'Evacuate' complete with LED indicator without backbox - LPCB approved.

Other Conventional Callpoints & Keyswitches

Product Code
514.002.002.A
White keyswitch in callpoint housing. English 'Bomb Alert' marking with ADT branded lid

CP920 MINERV A Addressable Callpoint

The CP920 is a red addressable callpoint with LED indicator. The CP920 is LPCB approved and supplied without backbox.

Product Codes

514.001.049.A
CP920 ADT branded

514.001.049.T
CP920 Thorn Security branded

514.001.049.Y
CP920 Tyco Branded

CP930 MINERV A Addressable Callpoint

The CP930 is a red addressable IP66 weatherproof callpoint with LED indicator. The CP930 is LPCB approved.

Product Codes

514.001.050.A
CP930 ADT branded

514.001.050.T
CP930 Thorn Security branded

514.001.050.Y
CP930 Tyco branded

514.001.512
Addressable potted module used in the CP530 and CP930 callpoints

CP937 MINERVA Addressable Callpoint

The CP937 is a red addressable IP55 outdoor callpoint with the same functionality as the CP930. The CP937 is based on the KAC Series 7000.

Product Code

514.001.054.A
CP937 Callpoint ADT branded

Special Marine Callpoints

Product Codes

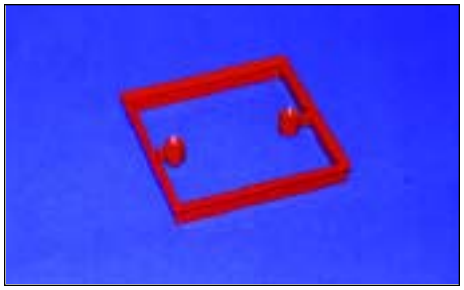
514.001.012
CP260M Marine callpoint complete with LED indicator - IP66

514.001.013
CP250M Marine callpoint complete with LED indicator surface mount

514.001.046
CP520 Red addressable callpoint with LED indicator without backbox - Marine approved and Thorn Security branded lid

514.001.022
CP530 Red addressable IP66 weatherproof callpoint complete with LED indicator - Marine approved and Thorn Security branded lid

Callpoint Ancillaries

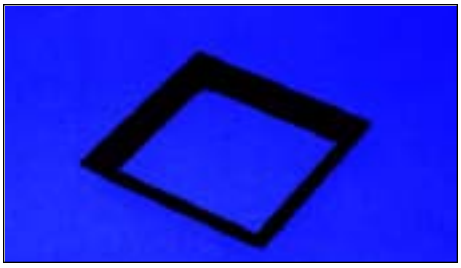


90-107
Red M141 spacer for red CP200/900 KAC callpoints

Product Code

90-106
Test keys for all CP200/500/900 callpoints except CP950Ex

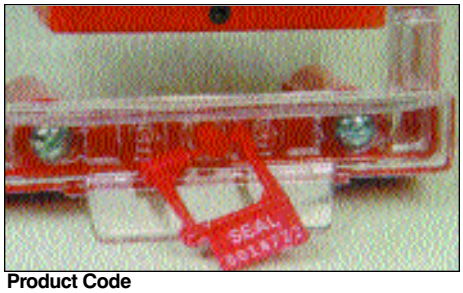
515.001.028
Callpoint hinged cover for use on CP200 and CP900 models



515.001.026
Black callpoint bezel for CP200/500/900

STOPPER

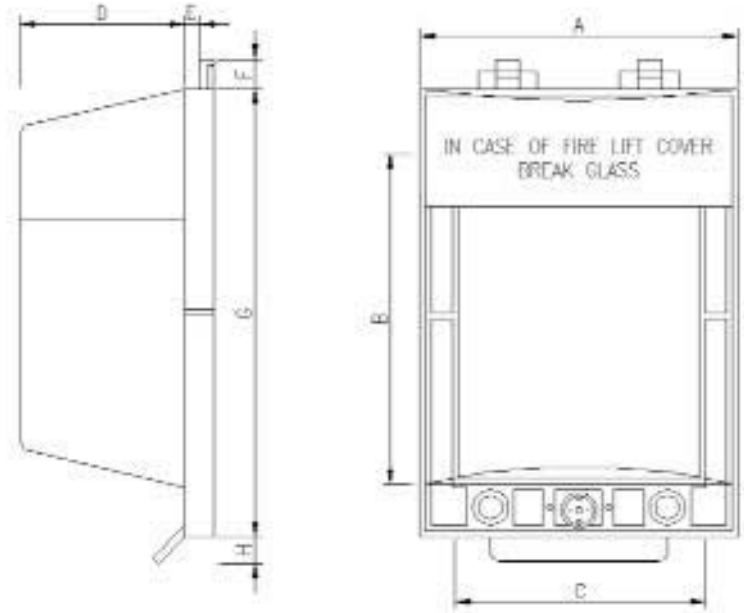
The callpoint STOPPER provides protection from malicious or accidental activation of manual callpoints. Available for flush or surface mounted callpoints the 'STOPPER' is also available with optional high pitch sounder which is activated when the lid is lifted.
An optional 'Break-Seal' fitting kit allows 'Break-Seals' to be used to provide extra protection.
WARNING:-*Break seals only to be fitted by agreement with relevant fire authorities.*
The STOPPER is suitable for all callpoints up to 100mm square, including CP820, CP920, CP200 and other indoor KAC style callpoints.



Product Code
515.001.033
IPO36 Break Seal Kit

Product Code	Ref	STOPPER Flush	STOPPER Surface	STOPPER II	With Sounder	Weatherproof
515.001.029	STI6530	*4*				
515.001.030	STI6531		*4*			
515.001.036	STI6535		*4*			*4*
515.001.034	STI1230			*4*		
515.001.035	STI3150			*4*		*4*
515.001.031	STI6532	*4*			*4*	
515.001.032	STI6533		✓		✓	

STOPPER Dimensions

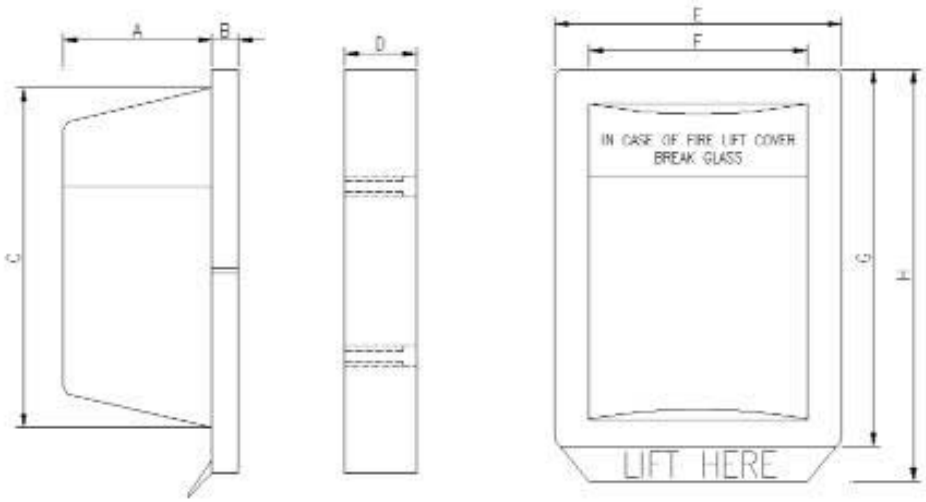


Millimetres	
A	137
B	140
C	104
D	45
E	12.5
F	12.5
G	185
H	12.5

	Flush Fit	Surface Fit (+30mm)
Stopper	STI6530	STI6531
Stopper with Sounder	STI6532	STI6533

	STOPPER	STOPPER II
Max. Callpoint Size	100 x 100mm	160 x 160 mm
Max. Callpoint Depth	57.5 (+30mm Surface)	120

STOPPER II Dimensions



Millimetres	
A	70
B	16
C	197
D	50
E	178
F	146
G	228
H	254

Stopper II Surface Fit - STI1230

STOPPER II

STOPPER II is constructed as the STOPPER from tough injection moulded polycarbonate. Physically larger than the STOPPER the STOPPER II extends the number of products to which these tough multi-purpose covers can protect.
It consists of a strong tamper-proof clear polycarbonate cover and frame that fits easily over such products as break glass callpoints. The STOPPER II can also be fitted with an integral battery powered sounder which activates if the cover is lifted.
The STOPPER II is suitable for callpoints up to 160mm square like the DIN820/830 and CP830.

Product Code
515.001.034
STI1230 Surface fit STOPPER II

Weather STOPPER & Weather STOPPER II

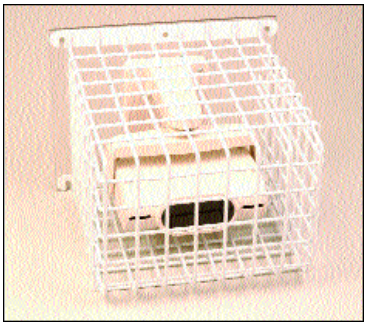
STI6535

The Weather STOPPER and Weather STOPPERII extends the life of weather exposed devices, such as break glass callpoints, by offering protection against harsh conditions and environments. Experience has shown that this protective cover can extend the life of products installed in saline atmospheres, such as oil rigs and ship decks. While offering environmental protection the Weather STOPPER and Weather STOPPER IIare constructed from tough durable polycarbonate which will also guard against tampering, vandalism or accidental operation of devices such as emergency switches.

Product Codes
515.001.036
STI6535 Surface fit Weather STOPPER
515.001.035
STI3150 Surface fit Weather STOPPERII

STI3150

Smoke Beam/CCTV Guard



The Smoke Beam/CCTV Guard is manufactured from tough coated steel rod and is designed to protect projected beam detectors or CCTV cameras from vandalism or accidental damage. Suitable for use with System Sensor, Hochiki and Fireray 2000 detectors.

Technical Specification
Dimensions: 260H x 200W x 321D mm

Product Code
516.015.009
STI9625 Smoke beam/CCTV guard

Extinguisher STOPPER

The Extinguisher STOPPER is a self powered electronic security device which can be installed and protecting fire extinguishers in minutes. The Extinguisher STOPPER is an effective way to stop vandalism, misuse or theft. This simple self contained device incorporates a unique and patented steel cable operated switch mechanism, which activates a piercing alarm when the extinguisher is removed from its normal position. One end of the operating cable is crimped and secured around the neck of the extinguisher and inserted into the alarm unit. If the operating cable is detached from the unit a 10dB sounder is activated.

Product Codes
515.001.038
STI6200 Extinguisher STOPPER
515.001.039
CO23 Spare key for extinguisher stopper

Exit STOPPER

The Exit STOPPER is a completely self contained and self powered security device to protect and deter the unauthorised use of emergency exit doors. It is a versatile, reliable and extremely easy to install electronic door alarm. If the door is opened the Exit STOPPER activates a 110dB electronic sounder. A key operated over-ride facility is incorporated into the front of the unit, which will allow authorised use of the emergency door.
The Exit STOPPER is injection moulded in flame retardant polycarbonate and can be easily installed on wooden, glass or metal doors. There are also options for remote and double door installation.
The unit comes complete with low battery warning, automatic reset facility, a choice of steady pulsating tones, a 9V long life alkaline battery and installation pack.

Product Code
515.001.037
STI6400 Red Exit STOPPER

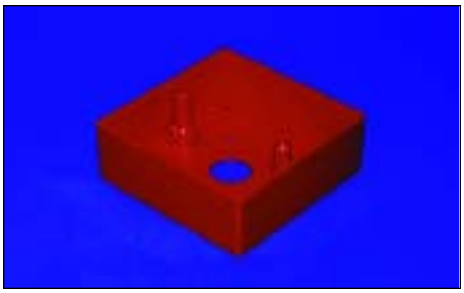
Keybox

This tough polycarbonate breakglass keybox is available to protect emergency keys and documents.

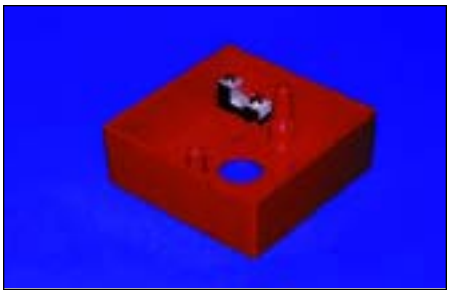
Product Code
515.001.039
STI6720 Keybox with printed glass

Ancillaries - Back Boxes

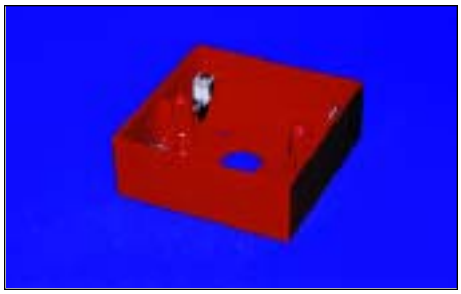
Unless stated the CP200/500/900 indoor callpoints are supplied as flush mount units. The CP range are approved for use with the standard backbox. However, SR2-T and SR3-T backboxes are also available.



515.001.021
Standard Red surface mounting back box for CP200/500 & 900 indoor callpoints



10-115
SR2-T Optional Back Box (2 terminals)



95-131
SR3-T Optional Back Box (3 terminals)

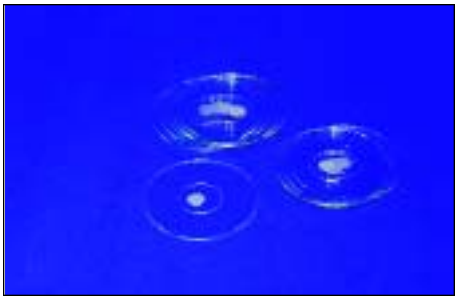
Callpoint Spare Glasses - Current

Product Codes
515.001.014
CP200/500/900 Spare glasses, white Arabic text on clear background (Pack 5)
515.001.023
CP200/500/900 spare glasses for CP200N/CP500N, white dutch text on clear background (Pack 5)
515.001.027
Deformable operating unit “glass” with English text for use in place of glasses, for kitchens or other areas where glass is not acceptable

515.001.025
CP200/500/900 Glasses, clear English text on white background. No logo (Pack 5). Fitted as standard to English CP200/500 and 900 Callpoints

515.001.024
CP200/500/900 spare glasses, white Arabic/English text with Thorn Security logo on white background (Pack 5)

Callpoint Spare Glasses - Old



515.001.010
Walsall callpoint glasses (Pack 10) for service spares. The Walsall callpoint is an old square callpoint with round glass

515.001.003
ZF121 Callpoint glass (Pack 10) for service spares. The ZF121 is a square metal fronted AFA MINERVA callpoint typically used on Firefinder, System 1100, ZF/System 1200, CP and CT systems

515.001.009
CP100A glass unscored (Pack 10) for service spares. The CP100A has a large square glass to the edge of the callpoint. Used on the same AFA systems as the ZF121.

Fulleon Range of Sounders

MXCE 2 Wire Symphoni Sounder

A Symphoni electronic sounder designed specifically for installation on the detection zone of the MXCE panel.

Technical Specification

Sound Output @ 1M: 100dB(A) +/-2dB(A) @ 24Vdc

Tones:

Continuous - 970Hz

Alternating - 970/800 Hz at 2 Hz

Pulsed - 970 Hz at 1Hz

Operating Temperature: -25 to +70 C

Construction: Red/White ABS

Ingress Protection: IP42

Termination: 2.5mm² Screw Terminals

Product Codes

576.501.204

Symphoni 2 Wire Sounder (Red)

576.501.205

Symphoni 2 Wire Sounder (White)

Fulleon 24Vdc Symphoni Sounder

The 24 Vdc Symphoni Sounder is a general purpose internal sounder, available either as a very high output sounder for noisy areas, or a high output low current sounder for applications where power is limited. Both versions share the same horn and backbox which has double cable entries for ease of installation.

The low power version has 3 selectable tones which may be employed for one, two or three stage alarm applications. The high output version has 32 selectable tones and retains full tone compatibility with the Roshni, Squashni and Askari product ranges.

Product Codes

576.501.200

SY/R Low Power Red Symphoni Sounder (3 tone)

576.501.201

SY/W Low Power White Symphoni Sounder (3 tone)

576.501.202

SYHO/R High Output Red Symphoni Sounder (32 tone)

576.501.203

SYHO/W High Output White Symphoni Sounder (32 tone)

Technical Specification

Model	Symphoni High Output	Symphoni (Low Power)
Operation	2 Hours Continuous	Continuous
Operating Voltage Range	9-28Vd.c.	12-30Vd.c.
Sound Output @ 1m	Up to 120dB(A)	100dB(A) +/- 2dB(A) @24Vd. c.
Volume Control		Down to 80dB approx.
Current Consumption	240mA +/- 20mA on Tone 3	5mA +/- 1mA at all volumes
Tones	1 to 32 (see table under Flashni section)	Alternating 990Hz/650Hz@2Hz Continuous 990Hz Intermittent 990Hz, On/Off@1Hz
Synchronisation	Synchronised Start	Synchronised Start
Frequency Stability	+/- 0.15%	+/- 0.5%
Operating Temperature	-25 °C to +55°C	-25°C to +70°C
Line Monitoring Method	Polarised Input	Polarised Input
Construction	ABS Plastic Case	ABS Plastic Case
Ingress Protection	IP42	IP42
Weight	0.58Kg	0.212Kg

Roshni

A flexible alarm sounder for Fire and Security applications complete with volume control and dil switch to provide 32 tones.

Low profile Roshni with Deep base offers IP65 protection. All Roshni sounders have synchronised start for self synchronisation without third wire.

Technical Specification

Dimensions:	93 Dia x 105D mm (Deep base)
Colour:	Red or white available
Approvals:	None (Approved variants available)
Output Voltage:	9-28Vd.c.
Typical Current:	24Vd.c.@16mA
Typ. Sound Output:	@1m 102dB (A)

Product Codes
ROSHRDSR
ROSHNI Sounder deep base - red
171.392
ROSHNI Sounder deep base - white

Squashni

The Squashni electronic sounder is the original ceiling sounder for use as a universal fire detector platform or as a stand alone sounder complete with blank cover. It comes complete with 28 pre-set tones and volume control and is fully compatible with Roshni tones, synchronised start.

Technical Specification

Dimensions:	112 Dia x 27D mm
Colour:	Matched to leading fire detector manufacturers
Approvals:	None (Approved variants available)
Output Voltage:	9-28Vd.c.
Typical Current:	24Vd.c.@16mA
Typ. Sound Output:	@1m 93dB (A)

Product Codes
576.501.030
Squashni white 24Vd.c.
576.501.031
Blank cover plate white for Squashni

Askari Compact

The Askari Compact is a compact bedroom sounder for unobtrusive installation. It comes complete with 28 pre-set tones and volume control and is fully compatible with Roshni tones, synchronised start.

Technical Specification

Dimensions:	87.5H x 85.75W x 36D mm
Colour:	Red or white available
Approvals:	BS 5839 pt 1
Output Voltage:	9-28Vd.c.
Typical Current:	24Vd.c.@16mA
Typ. Sound Output:	@1m 95dB (A)

Product Codes
576.501.240
Askari sounder - red
ASKW
Askari sounder - white

CF Motorised Bells

576.501.023A **576.501.022.A**

The CF Motorised bells are low current, fully suppressed and polarised.

Technical Specification

Dimensions:	6 & 8” Diameter available
Colour:	Red (other colours available to order)
Output Voltage:	18-30Vd.c.
Typical Current:	24Vd.c.@22mA
Typ. Sound Output:	@1m 94dB (A)

Product Codes
576.501.022.A
6" Bell 24Vd.c. motorised. 'Fire' text with ADT Branding
576.501.022.T
6" Bell 24Vd.c. motorised. 'Fire' text with Thorn Branding
576.501.023.A
8" Bell 24Vd.c. motorised. 'Fire' text with ADT Branding
576.501.023.T
8" Bell 24Vd.c. motorised. 'Fire' text with Thorn Branding

Electronic Solenoid Bell

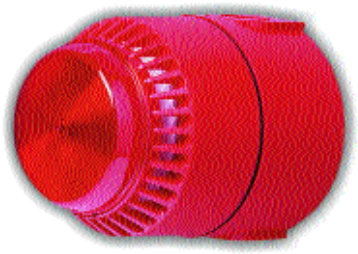
Unique patented alarm bell with miniature solenoid and integrated electronic control. No backbox required for surface wiring.

Technical Specification

Dimensions:	6” diameter
Output Voltage:	18-30Vd.c.
Typical Current:	24Vd.c.@30mA
Typ. Sound Output:	@1m 94dB (A)

Product Codes
20-100
6” 24Vd.c. Electronic bell, weatherproof - Wormald branded - white
20-101
6” 24Vd.c. Electronic bell - Wormald branded - red

Flashni



Combined sounder and beacon, combines the features of the Roshni electronic sounder with a fully integrated Xenon beacon. These sounders are fully compatible with all Roshni tones, automatic sounder synchronisation. Weather resistant to IP65.

Technical Specification

Dimensions:	93 Dia x 92D mm (Shallow base) 93 Dia x 121D mm (Deep base)
Output Voltage:	18-30Vd.c.
Typical Current:	24Vd.c.@68mA
Typ. Sound Output:	@1m 101dB (A)

Product Codes

20-118
Combined Roshni sounder/strobe complete with deep base

576.501.224
Combined Roshni Sounder/Strobe Red Body/Red Lens Low Profile complete with shallow base & tone switch.

576.501.225
Combined Roshni Sounder/Strobe White Body/Red Lens Low Profile complete with shallow base, & tone switch.

576.501.226
Combined Roshni Sounder/Strobe Red Body/Red Lens, Low Profile complete with shallow base, tone selection switch and separate sounder/strobe operation.

Fulleon Sounder T one Table

No.	1st TONE	2nd TONE	TYPICAL (mA/24V)	TYPICAL SOUND OUTPUT(dB @ 1m)
1	ALT TONES 800/970 at 1/4 Hz	14	18	104
2	SWEEPING 800/970Hz at 7Hz	14	19	105
3	SWEEPING 800/970Hz at 1Hz	14	18	105
4	CONTINUOUS at 2850Hz	14	29	116
5	SWEEPING 2400-2850Hz at 7Hz	4	23	114
6	SWEEPING 2400-2850Hz at 1Hz	4	23	113
7	SLOW WHOOP	14	15	103
8	SWEEP 1200-500 at 1Hz	14	16	103
9	ALT TONES 2400/2850 2Hz	4	27	113
10	INT TONE OF 970Hz at 1Hz	14	1	106
11	ALT TONES 800/970 Hz at 1Hz	14	18	105
12	INT TONE at 2850 Hz at 1Hz	4	20	116
13	970Hz at 1/4 SEC. ON 1 SEC. OFF	14	7	102
14	CONTINUOUS AT 970Hz	14	20	107
15	554 FOR 100ms and 440Hz FOR 400ms	14	12	99
16	INT 660Hz 150ms ON/150ms OFF	16	9	87
17	INT 660Hz 1.8s ON/1.8s OFF	17	12	91
18	INT 660Hz 6.5s ON/13s OFF	18	10	90
19	CONTINUOUS 660Hz	19	14	90
20	ALT 554/440Hz at 1Hz	20	13	95
21	INT 660Hz 1Hz	21	9	87
22	INT 2850Hz 150ms ON 100ms OFF	14	19	113
23	SWEEP 800-970Hz at 50Hz	14	18	105
24	SWEEP 2400-2850Z at 50 Hz	4	22	112
25	INTERMITTENT 970Hz 500ms ON 500ms OFF	25	12	100
26	INTERMITTENT 2850HZ 500ms ON 500ms OFF	26	18	109
27	CONTINUOUS AT 4kHz	27	33	84
28	ALTERNATING TONES 800/970 AT 2Hz	10	15	101
29	ALTERNATING TONES 988/645 AT 2Hz	988Hz	19	100
30	ALTERNATING 510/610 at 1Hz	510Hz	13	97
31	SWEEPING 300-1200 at 1Hz	31	19	97
32	CONTINUOUS AT 4kHz	27	33	84

Fulleon Sounder T one Compatibility T able

Fulleon Tone	Tone Number	2 Wire Symphoni	24V Symphoni	Sounder Base 601SB/601SBD 602SB/602SBD 901SB
		SWITCH A B	SWITCH 1 2 3 4 5	SWITCH 1 2 3 4
CONTINUOUS TONE (970HZ)	14	1 0	10010	111X (880Hz)
PULSED/INTERMITTENT TONE (970HZ@ 1HZ)	25	1 1	00111	011X (880Hz@1Hz)EURO ONLY
ALTERNATING TONE (970HZ/800HZ@2HZ)	1 (CLOSEST MATCH)	0 1 (990HZ/650HZ@2HZ)	11111	N/A
DUTCH SLOW WHOOP (500Hz-1200Hz-3s on/0.5s off)	7	N/A	11001	000X
SLOW SWEEP (800Hz/970Hz@1Hz)	3	N/A	11101	010X
FAST SWEEP (800Hz/970HZ@7HZ)	2	N/A	11110	100X
TWO TONE/ALTERNATING (800HZ/970HZ@1HZ)	11	N/A	10101	110X (660Hz/880Hz@1Hz)EURO ONLY

DB3 Flameproof Horn Sounder

This lightweight all GRP flameproof sounder is intended for use in potentially explosive gas and dust atmospheres and has been designed with high ingress protection to cope with the harsh environmental conditions found offshore and onshore in the oil, gas and petrochemical industries.

The flamepaths, flare and the body, are manufactured completely from a UV stable glass reinforced polyester. Stainless steel screws and sinter are incorporated thus ensuring a corrosion free product. A tapered flamepath is used to overcome the problems of assembly of parallel spigot flamepaths.

Technical Specification

Terminals: 6 x 2.5mm^2

Mounting: Stainless steel bracket with ratchet facility

Cable Entries: 1 x 20mm EExd.

Tone Selection: 27 user selectable tones.

Certification: CENELEC EN50014,18,19
BASEEFA Cert.No. BAS00ATEX2097X, EExd IIC 100°C (-55 t. amb + 55°C)T5. Zones 1 and 2.

UL Listed: Class 1 Div 2, Groups A-D
Class 1 Zones 1 & 2, AExd IIC T4.
Listing No. E203310.

GOST Certification: 1Exd IIC T4 & 1Exde IIC T4
Cert. No. A-0759.

Material: Body & horn in anti-static, UV stable, glass reinforced polyester. Swivel bracket & captive cover screws in stainless steel.

Sound Output: 115dB(A) +/- 3dB(A)(tone dependent).

Volume Control:

Nominal Output (dBA)	Input Current (mA)*
93	50
105	100
108	150
111	200
112	250
114	300
115	350

**Output measured with 24V input voltage. Tone set to 970Hz continuous.*

Weight: 6.0kg approx

Ingress Protection: IP66

Voltage: Up to 48Vd.c.

Current Consumption: 380mA at 24Vdc

Certified Temperature:

	EExd	UL	GOST Exd
DB3	-20°C to +55°C	-55°C to +55°C	-20°C to +50°C

Product Code

576.501.043

Flameproof Horn Sounder (DB3/D/048/N/1B/N/R)

MINERV A Range of Sounders

A range of sounders to meet a wide variety of alarm applications where loud, penetrating and distinctive warnings must be given to alert people of fire situations. In addition, multitone electronic sounders can give a variety of sounds to signal other conditions e.g. “extinguishing gas release imminent”, etc.

Features

- Wide range of both bells and electronic sounders
- High sound output characteristics
- Low current consumption
- Clean lines, modern styling
- Easy to install, low installation costs
- Weatherproof units for outdoor use
- Distinct sounds are available
- Motorised and Solenoid bells available
- Wide range of voltages available
- Addressable Loop Powered Banshee

*Datasheet - Product Code **PSF11** “Audible Alarms”*

Sounder Type	Weight (Kg)	Enclosure to IP	Current Consumption @24V d.c.	Sound Output db @ 1m	Frequency (Hz)	Output
150mm 6” Solenoid Bell	1.3	IP20/44	50mA	91	Ringing	A
150mm 6” Motorised Bell	0.7	IP22	15mA	94	Ringing	A
200mm 8” Motorised Bell	1.4	IP22	30mA	95	Ringing	A
Banshee LF	0.25	IP45/66	15mA	103	800-950	ABCD
Banshee HF	0.25	IP45/66	25mA	103	2500-3000	ABCD
Banshee Loop Powered*	0.30	IP45/66	See note below	100	800-950	B
Bedlam	0.30	IP66	30mA	113	2300-2900	ABCD
FM Bedroom Sounder	0.19	IP44	7mA	90	800-950	AB
Squashni Sounder	0.18	IP43	20mA	85	800-970	ABCD
YODALARM YO3	0.24	IP54	35mA	97	800-1000	ABE
YODALARM YO5	0.55	IP54	20mA	91	800-1000	ABE
YODALARM YO8	2.42	IP54	330mA	112	800-1000	ABE

A - Continuous
B - Fast Sweep ie 9 times/sec
C - Slow Sweep ie 3 times/sec
D - Buzz ie 120 times/sec
E - Interrupted

***LPBB521**

The loop powered addressable sounder unit is a low frequency Banshee that can be both controlled and powered via the MINERVA analogue addressable fire controller. With this facility, no separate sounder circuit needs to be installed, providing significant cable installation savings. The sounder output is set at a continuous fast sweep (9 time/sec) but may be pulsed (alert signal) under the control of the MINERVA fire controller.

Bells

6” Red Solenoid Operated Friedland Bell

The bells are the underdome type, with a high resonance pressed alloy-steel gong to ensure a loud clear-tone ring. The operating mechanism is fully enclosed and the gong is red stove enamelled for long life. The bells are designed for internal use, but gasket sealed conduit boxes can be provided for external use.

Product Codes

576.500.004.A

240V Red bell 6” 240Va.c. solenoid operated. ‘Fire’ text with ADT branding

576.500.004.T

240V Red bell 6” 240Va.c. solenoid operated. ‘Fire’ text with Thorn branding

576.500.009.A

24V Bell 6” 24V d.c. solenoid operated. ‘Fire’ text with ADT branding

576.500.009.T

24V Bell 6” 24V d.c. solenoid operated.‘Fire’ text with Thorn branding

577.001.002

Weatherproof gasket box 6” for use with Solenoid operated bells

6” & 8” Motorised Bells

Features

- CE marked
- Low current 6” bell (ONLY 15MA)
- Low cost
- Extra high 94dBA/m
- Slim profile (53mm)
- Fully suppressed and polarised
- Quick and easy to install

Model	MBF-6WE	MBF-8WE
Rated Voltage	24V d.c.	24V d.c.
Rated Current	15mA	30mA
Sound output	94dBA	95dBA
Operating Temp	-10 to +50°C	
Colour	Red	
Weight	720g	1420g

Product Codes

576.501.039.A

MBF-6WE ADT Branded

576.501.039.T

MBF-6WE Thorn Branded

576.501.040.A

MBF-8WE ADT Branded

Other branding available on request

Electronic Sounders

Banshee/Bedlam

Banshee

Weatherproof Banshee

Bedlam

Banshee Flush Mount Bracket

Besson Wafer Sounder

Flush Mount Sounder

An ultra low profile alarm sounder for fire and security applications utilising all of the best features of the traditional Banshee plus an additional volume control fitted as standard. The low profile unit has been designed to complement new building interiors and is available in red or white.

Features

- Ultra Low Profile
- Volume Control
- Side and Rear cable entry
- Optional Deep base
- Loop in out terminals

Sound Options:

Buzz: Very fast sweep at approx 120Hz

Fast Sweep: 800Hz-950Hz, sweeping 9 /Sec

Slow sweep: 800Hz-950Hz, sweeping 3/Sec

Continuous: 850Hz

Product Code	Branded	Colour	Power	Freq	dB	Alarm Current	Weatherproof
576.501.004.A	ADT	Red	24V	800-950Hz	107	15mA	No IP44
576.501.008.A	ADT	Red	24V	2.5-3KHz	105	25mA	No IP44
576.501.033.A	ADT	White	24V	800-950Hz	107	15mA	No IP44
576.501.024.A	ADT	Red	24V	800-950Hz	107	15mA	Yes IP66
576.501.015.A	ADT	Red	24V	2.5-3KHz	117	30mA	Yes IP66
576.501.004.T	Thorn	Red	24V	800-950Hz	107	15mA	No IP44
576.501.008.T	Thorn	Red	24V	2.5-3KHz	105	25mA	No IP44
576.501.033.T	Thorn	White	24V	800-950Hz	107	15mA	No IP44
576.501.024.T	Thorn	Red	24V	800-950Hz	107	15mA	Yes IP66
576.501.015.T	Thorn	Red	24V	2.5-3KHz	117	30mA	Yes IP66

Sound levels are quoted on E-SPL Effective Sound Pressure Level @1 Metre which is the output in a typical room setting. 117dB models are known as Bedlam sounders

Line Powered Banshee

The LPBB521 Line powered Addressable Sounder is designed to be driven from a Loop Powered MINERVA Analogue Addressable controller via the addressable loop. The sounder is low frequency [800-950hz]. The Sounder output is set to Fast Sweep, but may be pulsed under the control of the MINERVA.

Product Code	Branded	Colour	Power	Freq	dB	Alarm Current	Weatherproof
577.001.026.A	ADT	Red	Loop	LF	96	17mA	No IP44
577.001.029.A	ADT	White	Loop	LF	96	17mA	No IP44
577.001.026.T	Thorn	Red	Loop	LF	96	17mA	No IP44
577.001.029.T	Thorn	White	Loop	LF	96	17mA	No IP44
577.001.026.Y	Tyco	Red	Loop	LF	96	17mA	No IP44
577.001.029.Y	Tyco	White	Loop	LF	96	17mA	No IP44

Accessories

The combined mounting bracket for the Besson Banshee and Xenon Beacon allows quick and neat installation of combined sounders and beacons. The bracket allows the following electronic sounders to be mounted with the range of 1W Xenon Beacons:

- Besson Banshee
- Besson Bedlam
- Loop powered MINERVA Besson Banshee
- MINERVA FIRECRYER voice enhanced sounder

The bracket can be used with any of the 24Vd.c 1W Xenon beacons in red, clear, amber or blue (Part no.'s 540.001.030/031/032 & 033)

Product Codes

576.501.041

Banshee/Xenon bracket

576.501.042

Banshee IP66 backbox for use with loop powered banshees and FIRECRYERS

577.001.006

Flush mounting bracket for use with low profile banshees - white

576.501.011

Banshee/Bedlam weatherproof mains adaptor pack 240Va.c. to 24Vd.c. use on any 24Vd.c. Banshee or Bedlam

Besson Wafer Sounder

The standard Besson Wafer sounder is supplied in white with a blank cover included. The specification is as follows:

Input voltage: 24V d.c. (+/-25%)

Sound Output: 60dBA/90dBA at 1m typical (pot. Adjustable) offering the same sound formats as the Banshee sounder range. It can therefore be used in conjunction with the Banshee sounders on the same site.

Technical Specification

Current: 4mA to 15mA

Temperature Range: -40°C to + 70°C

Dimensions: Dia 103mm, Height 22mm (excluding coverplate)

Product Code

576.501.038

Besson wafer sounder and blank cover in white

Flush Mount Bedroom Sounder

Meeting the requirements for BS5839 part 1, the Bedroom Sounder range is well suited to hotels and residential environments where aesthetics is a prime concern. Matching the sound output of the Banshee range of sounders so therefore they can be mixed on a site.

Features

- Low current consumption 7mA
- Dual sound options selected via a jumper switch: 'Continuous' and 'Fast Sweep' 90dB
- Can be both Flush and Surface mounted
- Robust terminal connectors to accommodate up to 2.5mm² conductors

Product Codes

576.501.032.A

Flush Mount Sounder ADT Branded

576.501.032.T

Flush Mount Sounder Thorn Branded

Banshee Slow Whoop

This sounder has the same features as the standard Banshee sounder but comes with a slow whoop sound as standard to meet the requirements of the Dutch Market.

Product Code

576.501.019

24Vd.c. slow whoop low profile red sounder (Dutch)

Banshee IS28

Product Code

576.501.013

IS28VCL Banshee IS28 BS5839 low frequency BASEEFA certified intrinsically safe Grey sounder - 98dBA, 10mA. Certificate number. Ex87B2027 EExia IIC T5

Klaxon Secomak Siren

Product Code

576.502.010

MINIMITE Klaxon Secomak 24Vd.c. sounder siren - range 370 yards

Yodalarms

This versatile range of sounders are ideally suited for fire, safety and security hazard warning.

Technical Specification

Dimensions:

YO3:	89H x 89W x 85D mm
YO5:	134H x 134W x 128D mm
YO8:	216H x 216W x 153D mm

Product Codes

576.501.001

YO3 Yodalarm 3” 24Vd.c. 100dB @ 1Mtr

576.501.002

YO5 Yodalarm 5” 24Vd.c. 106dB @ 1Mtr

576.501.003

YO8 Yodalarm 8” 24Vd.c. 112dB @ 1Mtr

Sounder Circuit EOL

The sounder circuit EOL units or EOL resistors are supplied with the relevant control panels and sounder modules. Spare sounder circuit EOL modules for System 1600, 1700, MINERVA 1-4, T880 Modules and sounder circuits on the MINERVA main processor are available as follows.

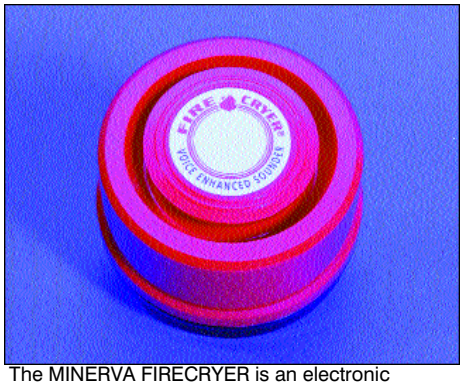
Product Code

509.013.031

Spare sounder circuit EOL unit

MINERVA Firecryer - Voice Enhanced Sounders

Firecryer



The MINERVA FIRECRYER is an electronic sounder, which provides as default the same electronic sound as the MINERVA Besson Banshees. In addition, the FIRECRYER provides up to 4 predefined voice messages, which can be synchronised across a zone of sounders. The FIRECRYER offers an excellent service upgrade opportunity in the UK for systems installed to BS5839pt1 and may also provide opportunities elsewhere.

Key Features

Single and Four Message Variants

A single message can confirm that the electronic sound is a fire alarm warning and differentiate it from other electronic sounders used in an environment. With four messages fire tests can be easily differentiated from alert and evacuate messages.

Two Wire Connection

The FIRECRYER uses a standard 2 wire 24V d.c. connection to carry power, message switching and message synchronisation. This enables a quick and easy upgrade to existing bells and sounders

MINERVA Banshee Compatible

The electronic alarm sound and mechanics of the FIRECRYER are the same as other Banshee sounders in the range. This allows them to be mixed with other sounders in a zone. It also means that existing Banshees can be very quickly upgraded to FIRECRYERs.

Synchronised and Unsynchronised Variants

Unsynchronised versions provide fast retrofit and are acceptable if only one FIRECRYER is used per area to enhance the electronic sounders. Synchronised variants only require a synchro board adding at the fire panel and then allow all FIRECRYERs on two sounder circuits to be synchronised.

Low Power

The FIRECRYER takes marginally more power than an equivalent electronic sounder. This enables voice enhanced sounders to be offered without the high additional cost of large battery backups.

Standard Products

The FIRECRYER is available in 3 models (unsynchronised, synchronised and 4 message synchronised) in ADT branding with predefined English messages and 100dBA fast sweep alert sound to comply with BS5839Pt1. Other variants with different branding, different language messages and different tones are available upon request.

Technical Specification

Dimensions :	IP45 - 92dia 61.3 Hmm
	IP66 - 92dia 85.5 Hmm
Operating Voltage:	Nominally 24Vd.c.
	Min. 18Vd.c. Max. 30Vd.c.
Current Consumption:	Average 19mA
	Min. 10mA
	Max.23mA
	(Subject to message)
	(at max. output)
Sound output:	Fast sweep - 100dBA
Voice message:	97dBA approx

Volume Control Via variable resistor with 20dB range from maximum

Polarity D.C. reverse polarity protection

Operating Temp:	-5°C to +55°C
Humidity:	90% relative humidity (non-condensing)
Weatherproofing:	Standard base - IP45
	Special base - IP66
Housing Material:	Red Flame-retardant ABS

Standard Messages

AK - "Fire Emergency, Please remain calm and evacuate the building immediately"

AB - "This is a fire alert. This is a fire alert. Await further instructions. Await further instructions."

SP - "This is an ADT fire alarm test. No action required"

AE - "Fire Alarm Test Now Complete"

Sync Board	MFC 1SB	MFC4SB
PCB Dimensions	75.5 x 100mm	138 x 100mm
EMC/RFI	CE Marked	
Operating Temp	-5 to +55°C	
Operating Voltage	NA	18-30V d.c.
Quiescent Current	NA	6mA (Max)
Message Mode	28mA	
Sounder Circuit	2 x 500mA Fused	

Product Codes

576.501.037

MFC4DEMO Firecryer 4 message demo box

576.501.100

MFC1SB Firecryer single message synch board for use with single message synchronised MINERVA Firecryers

576.501.101

MFC4SB Firecryer 4 message synch board for use with 4 message MINERVA Firecryers

576.501.103

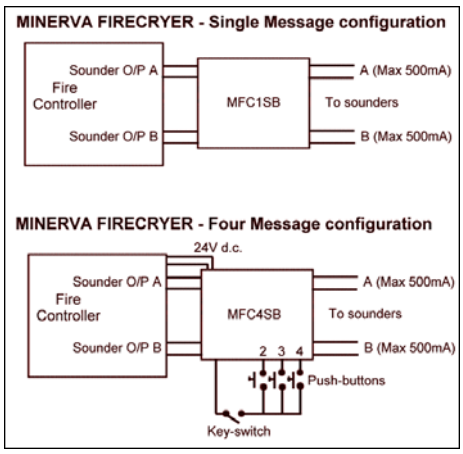
MFC4ENC 4 message synch board enclosure with 3 position keyswitch for use with 576.501.101

576.501.042

Banshee IP66 backbox for Loop powered Banshee and Firecryers

Product Codes	Product Reference	Message 1	2	3	4	Brand	Synchronised
576.501.034.A	MFC1SEA	AK	-	-	-	ADT	Yes
576.501.035.A	MFC4SUA	AK	AB	SP	AE	ADT	Yes
576.501.036.A	MFC1EA	AK	-	-	-	ADT	No
576.501.104.A	*MFC4SCA	Customer Defined				ADT	Yes

** For recording of special messages there is a charge. This can be ordered under product code **576.501.105** MFC-CM. This includes the supply of a different timer chip for MFC4SB synchronisation board.*



Visual Indicators

Single Gang Lamp/Buzzer Units

Lamp Buzzer units may be used for local alarms when high level audible warnings may not be appropriate. Available in flush and surface mount versions to fit standard single backboxes

Dimensions: 90H x 90W x 40D mm

Product Codes

540.001.012

Lamp (red)/buzzer unit flush mounting MK2 including single gang backbox. Labelled 'Fire'

540.001.013

Lamp (red)/buzzer unit surface mounting MK2. Labelled 'Fire'

Xenon Beacons - 24V Including Surface Mount Adaptor

This high quality range of Xenon beacons are tested to IP 65 making them ideal for the most stringent applications.

Each beacon incorporates a low profile Frestral lens designed to give maximum light output.

The mounting base is available to mount both the beacon and a sounder.

Features

- Available in 1, 2, 3 and 5 watts
- Protected to I.P. 65
- Attractive low profile design
- Optional bracket for mounting both Beacon and Banshee Sounder

Product Codes

540.001.030

Low profile clear 24Vd.c. 1 watt

540.001.031

Low profile blue 24Vd.c. 1 watt

540.001.032

Low profile amber 24Vd.c. 1 watt

540.001.033

Low profile red 24Vd.c. 1 watt

20-112

Low profile 2 watt Red

20-113

Low profile 5 watt Red

20-120

Low profile 3 watt Red

Technical Specification

Voltage V d.c.	Power Output Watt(s)	Alarm Current mA	Flash Rate	Rating	Temp. Range	Dimensions (mm) Height	Diameter
24	1	42	60/min	IP65	-30 to +70°C	51	75
24	2	84	60/min	IP65	-30 to +70°C	51	75
24	3	126	60/min	IP65	-30 to +70°C	51	75
24	5	210	60/min	IP65	-30 to +70°C	75	90

XB11 Flameproof Xenon Beacon

These certified beacons have been designed for use in potentially explosive gas and dust atmospheres and harsh environmental conditions. The glass reinforced polyester enclosures are suitable for use offshore or onshore, where light weight combined with corrosion resistance is required.

The beacon housing is manufactured completely from a U.V. stable, glass reinforced polyester. Stainless steel screws and mounting bracket are incorporated ensuring a totally corrosion free product.

Product Code

540.001.039

Flameproof Xenon Beacon (XB11B02406RNBNNNR)

Voltage	24Vd.c.
Tube Energy (Joules)	5
Peak Current Consumption (mA)	320
Effective Intensity (Cd)	29
Peak Intensity (Cd)	22213
Power Consumption (Watts)	8

Note: The Cd figures are for a clear lens @ " 1Hz flash rate. For red lens multiple by 0.15

Weight:	2.5Kg
Certified Temperature:	EExd -55°C to + 55°C (T5) -55°C to + 40°C (T6)
Ingress Protection:	IP66
Terminals:	6 x 2.5mm^2
Entries:	2 x 20mm ISO EExd.

Technical Specification

Certification: BASEEFA EExd IIB 100 °C (-55 t. amb +55°C)T5.
85 °C (-55 t.amb + 40°C)T6.
Cert. No. 99 ATEX 2195X.
CENELEC EN50014 and EN50018

Material: Body: - Glass reinforced polyester
Lens: - Glass.
Cover Screws + Backstrap: - Stainless steel 316.

Finish: Red

XB8 Intrinsically Safe Beacon

This ruggedised, intrinsically safe and weatherproof beacon is intended for use in potentially explosive atmospheres, and has been designed with high ingress protection to cope with the harsh environmental conditions found offshore and onshore in the oil, gas and petrochemical industries

Product Code

540.001.038
Intrinsically Safe Xenon Beacon
(XB8BB024CNR)

Technical Specification

Certification:	CENELEC EN50014, 20 & 39 BASEEFA certificate No. EX 96D2446 (apparatus) BASEEFA certificate No. EX96D2447 (system) EExia IIB T4 Zones 0,1 & 2 GOST Certification: 0Exia IIBT4, Cert. No. A-0757
Material:	UV stable glass reinforced polyester body. Clear polycarbonate cover/lens. Retained stainless steel cover screws.
Finish:	Self coloured red
Tube Type:	Xenon discharge
Lens Colour:	Clear
Terminals:	8 x2.5mm^2
Flash Rate:	1 flash per second
Cable Entries:	Up to 3 x M20 via knockouts.
Tube Energy:	0.5 Joules
Weight:	1.4kg
Certified Temperature:	-55°C TO + 60°C
Ingress Protection:	IP66
Tube Life:	>1 x 10^{6}Flashes
Voltage:	24V via suitable barrier
Current Consumption:	71mA max nominal

Voice Alarm Modules

VM520 Voice Module

The VM520 is a simple voice evacuation module which memorises and amplifies three voice messages programmed during manufacturing.

The VM520 is designed to provide voice evacuation in small buildings or small public areas in large buildings.

Features

- Fully monitored system when used in conjunction with MINERVA Analogue Addressable Fire Controller, with all speaker cabling faults detected, enabling use of this unit on projects with full BS5839 requirements
- Customised messages available
- Messages can be triggered via MINERVA address loop or via closing contact inputs
- Output capacity for up to four loudspeakers
- Clear “test” message can be transmitted for the weekly system check, instead of “evacuate”. This will prevent any misunderstandings at test time.

Manual - Vol08A-02-D14 “Ancillaries Manual”

Technical Specification

Operating temperature:	-20°C to +70°C
Relative Humidity:	up to 95% non-condensing
Addressable circuit input:	125mA from loop
Direct Message trigger:	Volt free closing contacts (1 per message)
Power Supply:	20 to 32 Vd.c.
Quiescent Current:	15 mA
Alarm Current:	120mA per speaker

Product Codes

577.001.101
VM520 Housing

577.001.107
VM520 Peprom (IC6)

577.001.102
VM520 PCB (requires housing)

Flush Mounting Loudspeaker

A loudspeaker tested for compatibility with the VM520.

Product Code

577.001.106

Flush mounting loudspeaker 8 ohms

Manual - Vol08A-02-D14 “Ancillaries Manual”

Auxiliary Interface Relays

Boxed Relays

567.001.004

Relay 5000 One or two plug in relays on PCB. Order relay **(569.001.007)** separately.

567.005.005

Relay 5016. Supplied with 1 PCB but can fit a maximum of 2 PCB's each containing up to 8 DIL relays. (Rated at 1 amp @ 30Vdc resistive)

567.005.004

Relay 5010. Supplied with 1 PCB but can fit a maximum of 2 PCB's each containing up to 5 plug in relays. Order relay **(569.001.007)** separately.

568.001.006

Relay 5016 PCB (8 Relays) - Rated at 1 amp @ 30Vdc resistive.

567.007.008

Alarm Relay 240Va.c. MK4

567.007.009

Alarm Relay 24Vd.c. MK4

Spare Relay Housings

568.001.007

Relay 5000 Housing auxiliary relay (small)

568.001.008

Relay 5010 Housing auxiliary relay (large)

Cradle Relay and Retaining Clip

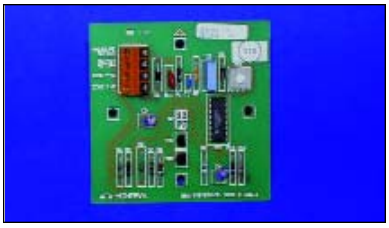
Product Code

569.001.007

Cradle relay and retaining clip 2 C/O 26V nominal 700K ohm coil 5 amp (used with Relay 5000 and 5010).

Miscellaneous Fire Products and Spares

Sprinkler Delay Module



Product Code

584.002.001

Sprinkler delay module. Provides preset delay between sprinkler pressure switch and conventional fire detection panel.

Zonal Sounder Circuit Monitoring PCB

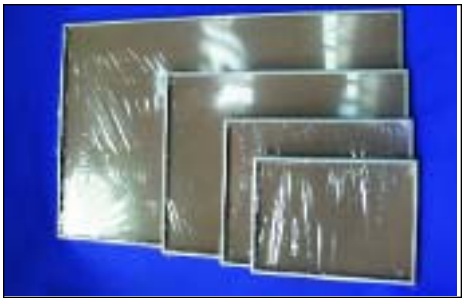
The Zonal Sounder Circuit Monitoring PCB provides relay inputs (5 off) to interface to 5 separate, and monitored sounder circuits. Each has a maximum of 2 Amps.

Product Code

541.001.018

Zonal sounder circuit monitoring PCB

Fire Notice Frames



These frames are used mainly for Fire Alarm Zone Charts and are available to fit A4 to A1 size drawings. These come supplied with fitting hooks.

Product Codes

525.001.005
A4 Dimensions: 212mm x 297mm

525.001.006
A3 Dimensions: 280mm x 356mm

525.001.007
A1 Dimensions: 483mm x 783mm

525.001.008
A2 Dimensions: 483mm x 367mm

Fire Resistant Cable

DÄTWYLER Lifeline cable is suitable for fire alarms and emergency lighting where BS6387 and BS7629 standards are acceptable and meets the installation and performance requirements of:

- BS5839 Pt.1 for use in fire alarms
- BS5266 for use with emergency lighting
- BS4066 'Tests on electrical cable under fire conditions'
- IEC331 fire resistance

Lifeline is LPCB approved to BS6387 CAT CWZ and BASEC approved to BS7629.

Lifeline is low smoke, zero halogen, has an integral aluminium backed mylar tape screen with tinned drain wire and requires no special terminations, tools or ferrules for installation.

Full details of Lifeline cable can be found in the DÄTWYLER Lifeline datasheets on the Tyco Safety Products website (www.tycosafetyproducts - europe.com).

DÄTWYLER offer a wide range of cable and safety cabling systems including complete safety cable systems to DIN4102 part 12. All DÄTWYLER products are available at preferential prices to Tyco companies via Tyco Safety Products. For more information contact Rob Sutcliffe (rsutcliffe@tycoint.com).

The following DÄTWYLER Lifeline cables are held in stock at Tyco Safety Products, Letchworth warehouse, together with suitable P clips and glands. Cables are priced per metre but must be ordered in units of 100 metre. P clips and glands are priced each but must be ordered in packs.

Product Codes	Description - DÄTWYLER Lifeline cable			
	No. Cores	Core Size	Colour	Clips
599.048.020	2 + earth	1 mm	Red	P34 R
599.048.022	2 + earth	1.5 mm	Red	P34 R
599.048.023	2 + earth	1.5 mm	White	P34 W
599.048.024	2 + earth	2.5 mm	Red	P37 R
599.048.032	4 + earth	1 mm	Red	P37 R
599.048.034	4 + earth	1.5 mm	Red	P40 R
599.048.035	4 + earth	1.5 mm	White	P40 W

Product Codes	Description - DÄTWYLER Lifeline Fire Resistant P Clips & Glands		
	Qty. per pack	Reference	Colour
599.048.001	50	P34	Red
599.048.002	50	P34	White
599.048.003	50	P37	Red
599.048.005	50	P40	Red
599.048.006	50	P40	White
599.048.007	50	P43	Red
599.048.009	10	NG1	Red
599.048.010	10	NG1	White

Technical Specification

Construction

Conductor:	Bare copper, solid or stranded to BS 6360
Insulation:	Special double layer insulation according to BS 7655, E15
Inner Covering:	High temperature resistant glass fibre tape
Screening:	Al-Laminated tape with tinned copper drain wire, solid to BS 6360
Outer Sheath:	Flame retardant polyolefin compound according to BS 7655, LTS3

Technical Properties

Rated Voltage:	300/500V
Test Voltage:	2000V, 50Hz core/core 2000V, 50Hz core/screen
Operating Temp:	-15°C to +90°C
Core Colours:	• 2 cores + earth: red, black • 4 cores + earth:red,yellow,blue,black
Sheath Colour:	Red or white

General Properties

- Zero Halogen, no corrosive gases - IEC 60754-2, BS 6425 part 1
- Reduced fire propagation - IEC 60332-3, BS 4066 part 3
- Minimum smoke emission - IEC 61034, BS 7622
- Insulation integrity - IEC 60331 (FE180), BS 6387 (cat. CWZ)

Approvals

- BASEC

No. of Cores x Cross Section (n x mm ^{2})	Copper Content (Kg/Km)	Total Weight (Kg/Km)	Outer Diameter (approx. mm)	Calorific Potential (KWh/m)
2 x 1.0	19	75	7.4	0.16
2 x 1.5	29	97	8.2	0.18
2 x 2.5	48	141	9.6	0.24
4 x 1.0	39	114	8.6	0.23
4 x 1.5	58	149	9.6	0.27

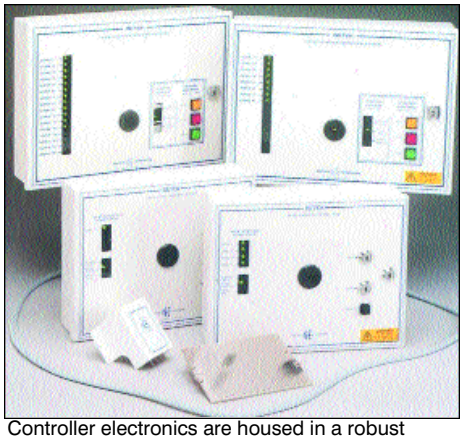
Water Leak Detection Alarms

Introduction
The Water Leak detection system is a water detection alarm designed to be used in situations where not just flooding but also undue dampness could cause damage or ultimately become dangerous.
The system comprises an electronic monitoring and alarm control panel connected to sensors located in the area requiring protection and can be custom made with a variety of types of detection sensor to suit the characteristics of the areas to be covered.
This system has been designed for ease of installation and modern micro-electronics ensure a high degree of reliability.

Typical Applications
- Computer Rooms, Telecommunications and Office Areas
- Electrical Plant and Tank Areas
- Valuables, Antiques and Artifacts
- In general, wherever the presence of water could be a potential problem to people, equipment, perishable stock, data/information archives and record stores, hospital theatres and so on.

There are also sensors for the detection of non-conductive fluids such as diesel/oil.

DETEK Water Flood Detection Controllers



Controller electronics are housed in a robust cabinet and provide accurate sensing for water leakage and comprehensive alarm facilities.
The system is ideal for all types of applications utilising a mixture of sensors on a single control panel to give optimum flexibility.

All systems have a test facility to enable simple regular confidence checking of the equipment.
Lockable cabinets constructed in mild steel with stove enamelled finish for surface mounting.
20mm Knockouts are provided for ease of cable entry.
Indications of status on each zone, wiring fault and supply healthy. Mains fail battery back-up indication where applicable.
The 85dBA pulsed audible alarm has a fully functional local mute facility.

Quality
- **Electro Magnetic Compatibility** - All of the control panels and sensors have been performance tested to meet the requirements of EN55022 for emissions and EN50092 for immunity
- **British International Standards** - The equipment is manufactured in accordance with EN ISO 9001 procedures
- **Electrical Safety** - Manufactured in accordance with Electrical Equipment (Safety) Regulations 1994 - Low Voltage Directive (SI 1994/3260).

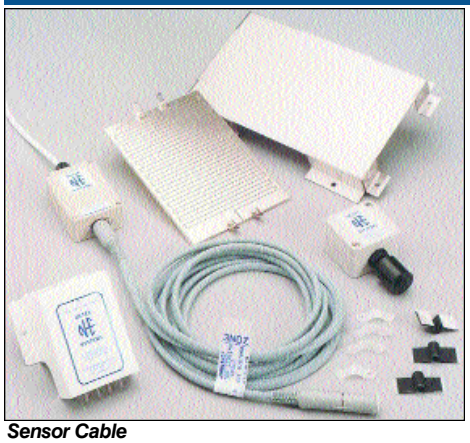
Technical Specification

Dimensions:	160H x 220W x 62D mm (Single Zone) 270H x 362W x 84D mm (Multi Zone)
Supply:	Single phase 240Va.c., 25VA Max.
Relay Contacts:	Two sets of volt free change over contacts for alarm and one set for wiring fault or power loss. These may be used to link into Building Management Systems or for remote alarms and beacons up to 2A, 50Va.c./d.c.

Product Codes
508.200.004
1 Zone - water/flood control panel
508.200.005
2 Zone - water/flood control panel
508.200.006
4 Zone - water/flood control panel

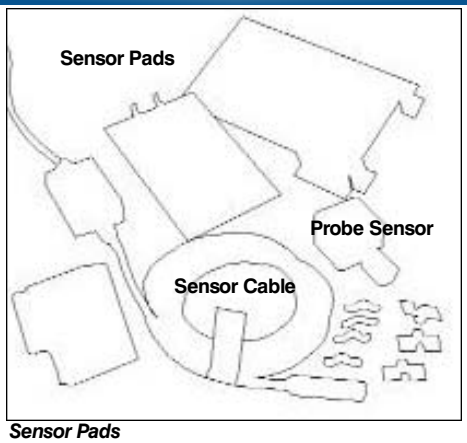
Compatible Sensors

Sensor Cable, Sensor Pads & Probe Sensors



Sensor Cable
Sensor cable comprises high flexibility conductors insulated by Helagaine mono-filament braiding. Cable or tape sensors are suitable for general protection under false floors, or can be fastened directly to pipework enabling coverage in ceiling void areas.
The cables can be connected together, up to 100m, to cater for larger areas.
For each zone a 'start of line' and an 'end of line' module is required.

Technical Specification
Dimensions: 8mm dia



Sensor Pads
Sensor pads are constructed from glass fibre with an anti-corrosive nickel plated surface. Pads will detect a few cc's of liquid and are either face up for location under vulnerable points or face down for a general coverage.

Technical Specification
Dimensions: 115H x 160W mm

Probe Sensors
Probe sensors are the least sensitive and are often employed as water level sensors. In general the sensor is enclosed in a protective cover which also provides a means for fixing and 20mm gland entry. The probe is designed for vertical mounting at skirting level though may be mounted in voids or sumps. A screw allows 16mm height adjustment after the sensor is installed.

Technical Specification
Dimensions: 85H x 62W x 62D mm

Product Codes
Sensor Cable
516.200.010
CD/5 5 metre length of sensing cable
516.200.011
CD/10 10 metre length of sensing cable
516.200.012
SOL Start of line for sensing cable
516.200.013
EOL End of line for sensing cable
516.200.014
FF1 Sensing cable fixing clips
516.200.015
CDT Sensing cable identification tags
Sensor Pads
516.200.016
SFU Sensor pad face up
516.200.006
SFD Sensor pad face down
516.200.007
SFD/C Cover for sensor pad face down
Probe Sensors
516.200.004
SPS/V Vertical mounting probe sensor complete with cover

Wire Free Product Range

Introduction
Wire free fire system technology is fast becoming a recognised and accepted alternative to wired fire alarm systems. Tyco Safety Products Radio Fire Alarm System provides a level of performance and reliability comparable to hard-wired systems. It also has the added advantage of being totally flexible, quick and easy to install with virtually no damage or disruption.

This enables the installation of a fire alarm system to be carried out in an occupied building where cabling is unacceptable, unwelcome, disruptive or impracticable. The cost of "making good" and redecorating is significantly reduced with wire free systems.

Radio Systems are highly cost effective and can easily be modified or extended to combine with existing hard wired systems. A system can be tailored for use in any existing building to meet highly individual needs for many commercial and industrial applications. Regarding fire detection, the radio system can be considered to be identical to a hard-wired system, with the fire survey carried out to the same standards.

The Radio Survey

It is important that a radio survey is carried out by trained personnel on all sites, before a complete system quotation can be made.

Features

- Detectors fire tested to prEN54 part 7
- Designed to meet BS5839 Part 4
- Minimum Installation damage and disruption
- Flexible system design up to 96 zones
- System easily modified or extended
- 80 character LCD pinpoints each alarm with plain text location messages
- Full zonal LED display and detailed fault annunciation.
- Suitable for permanent or temporary applications.
- 1000 Event memory
- Up to 27 repeater panels
- Long battery life

Typical Applications
- Heritage and Listed Buildings
- Art Galleries and Museums
- Schools and Colleges
- Hospitals, Clinics and Nursing Homes
- Temporary Systems for Refurbishments
- Airports and Military Bases
- Government and Council Buildings
- Exhibition Complexes and Stadia.

Note: The system elements and associated product codes described in the Wire Free section relate to the UK frequency variants as approved by the Home Office for use in "low powered" systems in the UK. 173 MHz (field devices) and 459 MHz (battery powered sounders). These frequencies may be suitable for applications in other countries. Please contact Tyco Safety Products for further information.

Controllers

The System 5000 FIRE POINT is designed using EMS radio technology allowing flexibility and expansion of wire-free fire detection systems. The controller's features have been targeted, but are not exclusive to, a 4-zone panel system but with the added benefits given by wire-free installation.

The fire alarm control panel incorporates state of the art radio technology coupled with the features required providing the user with a cost effective and practical fire alarm panel.

The System 5000 FIREPOINT uses approved industry standard devices such as callpoints, sounders and Ziton detectors etc.

The addressable detector is alkaline battery powered with a 5 year typical life cycle including call points and sounders.

The panel technology is designed to meet the requirements of the BS5839 and EN54 standards and has been fully tested by the DTI to satisfy the requirements of MPT 1305 and 1328 radio standards. VHF technology for receiving information from devices is combined with UHF (at 500mW) for command signals to radio sounders and personal pagers.

Technical Specification
Dimensions: 330 x 450 x 116mm
Power Requirements: 220/240V, 50Hz

Product Codes
Networked Versions
517.131.011
96 zone analogue addressable radio LAN controller, VHF receiver , UHF transmitter, 252 device capacity c/w keypad and VFD display. 2 hardwire sounder circuits. RS232 and RS458 ports. BS5839 and EN54 Standard. C/W 2 Helical Antennas and Thermal Printer.
517.131.012
24 zone analogue addressable radio LAN controller with printer option, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display with option for VFD display. 2 hardwire sounder circuits. RS232 and RS 485 ports. c/w 2 helical antennas.
517.131.013
24 zone analogue addressable radio LAN controller, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display with option for VFD display. 2 hardwire sounder circuits. RS232 and RS485 ports. Comes with 2 x helical antennas and thermal printer.
517.131.014
12 zone LAN analogue addressable controller with printer option, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display. 2 hardwire sounder circuits. RS232 and RS485 ports. c/w 2 helical antennas.
517.131.015
12 zone radio LAN analogue addressable controller with panel mounted event printer, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display. 2 hardwire sounder circuits.RS232 and RS485 ports. Comes with 2 x helical antennas and thermal printer.
517.131.016
4 zone radio LAN addressable controller, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display. 2 hardwire sounder circuits. RS232 and RS485 ports. Supplied c/w 2 helical antennas.
Stand Alone Versions
517.131.001
24 zone analogue addressable controller, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and VDF display. 2 hardwire sounder circuits. RS232 and RS485 ports. BS5839 and EN 54 Standard. Supplied c/w 2 helical antennas (Not inc. Batteries).
517.131.002
12 zone analogue addressable controller, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and VFD display. 2 hardwire sounder circuits. RS232 and RS 485 ports. BS5839 and EN54 Standard. Supplied c/w 2 helical antennas (Not inc. Batteries).
517.131.017
96 zone analogue addressable controller with panel mounted printer, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and VFD display. 2 hardwire sounder circuits. RS232 and RS485 ports. c/w 2 helical antennas.
517.131.018
24 zone analogue addressable controller with panel mounted printer, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display with option for VFD display. 2 hardwire sounder circuits. RS232 and RS485 ports. Supplied c/w 2 helical antennas.
517.131.019
4 Zone Addressable Control Panel VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display. 2 hardwire sounder circuits. RS232 and RS485 ports. BS5839 and EN 54 Standard. Supplied c/w 2 helical antennas (batteries are not supplied).

Field Devices

Radio transmitters are incorporated into each field device to communicate with the controllers. The units are programmed with a device number, zone number, system code, RX number and TX number. These identities are sent back to the controller in the event of a fire, battery low condition or tamper, to precisely identify the location of the event on the controller display.

Power to the radio transmitter is supplied by a two stage Lithium battery pack . The battery pack provides up to five years service under normal operating conditions. When primary power begins to deteriorate, a signal is sent to the controller and a low battery fault is indicated. After a 'battery low' signal has been reported, devices will continue to operate for a further 30 days.

Optical Smoke Detectors

The Analogue Addressable Optical Smoke Detector is bayonet-fitted to a radio address/ transmitter module incorporating alkaline batteries and supplied with a surface mount base unit. Removal of the detector or address/ transmitter module will indicate a fault condition. The detector is manufactured by Ziton and is designed to comply with BS5839 Part 5 and EN54 Part 7. The Optical Smoke Detector operates on an advanced light scattering principle, using a wide angle, light beam together with an extra high sensitivity photodiode receiver. An internal polling system checks for smoke particles every 5 seconds. Initial detection of smoke traces accelerates polling to every 2 seconds The alarm is verified twice to ensure freedom from false alarms.

The detector incorporates a selectable automatic lock, which if enabled, locks it into its base when plugged in, preventing unauthorised removal. Each unit has a unique address configured during manufacture and is individually addressable by the system controller. The radio address module is programmed to report at regular intervals of 5-9 minutes.

Designed and manufactured using the latest techniques and surface mount technology ensures component count is kept to a minimum, thereby maximising reliability.

The address/transmitter module is powered by a low-voltage dual supply alkaline battery pack. The battery pack condition is continually monitored. The battery pack has been tested to provide a typical 5 years life cycle for normal site operations. The system indicates remaining battery capacity and a low battery condition is indicated to the controller as a fault allowing 30 days for the battery pack to be changed before unit failure.

Technical Specification
Dimensions: 110 x 75mm

Product Codes
Addressable
517.131.005
Addressable Optical Smoke Detector with 4 sensitivity settings c/w transmitter, processor, radio address module, battery board, ceiling mount.
Analogue Addressable
517.131.009
Analogue Addressable Optical Smoke Detector with 4 sensitivity settings, c/w transmitter, processor, radio address module, battery board, ceiling mount.

Heat Detectors

The Analogue Addressable Heat Detector is bayonet-fitted to a radio address/transmitter module incorporating alkaline batteries and supplied with a surface mount base unit. Removal of the detector or address/transmitter module will indicate a fault condition. The detector is manufactured by Ziton and is designed to comply with BS5839 Part 5 and EN54 Part 5 (grade 1 and 2) and part 8 (range 1).

The Heat Detector operates on a highly sensitive thermistor, which measure the actual temperature and rate of rise change. At regular intervals, the detector carries out a self test that checks and verifies every function, including the thermistor, and sensitivity to temperature. Any failure is automatically reported to the control panel.

The detector incorporates a selectable automatic lock, which if enabled locks it into its base when plugged in, preventing unauthorised removal. Each unit has a unique address configured during manufacture and is individually addressable by the system controller. The radio address module is programmed to report at regular intervals of 5 - 9 minutes.

Designed and manufactured using the latest techniques and surface mount technology ensures component count is kept to a minimum, thereby maximising reliability. The address/transmitter module is powered by a low-voltage dual supply alkaline battery pack. The battery pack condition is continually monitored. The battery pack has been tested to provide a typical 5 years life cycle for normal site operations. The system indicates remaining battery capacity and a low battery condition is indicated to the controller as a fault allowing 30 days for the battery pack to be changed before unit failure.

Technical Specification
Dimensions: 110 x 75mm

Product Codes
Addressable
517.131.006
Addressable Heat Detector with 4 sensitivity settings c/w transmitter, processor, radio address module, battery board, ceiling mount.

Analogue Addressable
517.131.029
Heat Detector with 4 sensitivity settings c/w transmitter, processor, radio address module, battery board, ceiling mount.

Callpoints

The Radio Callpoint is battery operated, incorporating a radio addressable transmitter thereby eliminating the need for wiring back to the fire alarm control panel.

The callpoint is designed to meet BS5839 part 2.

The callpoint is fitted into an industry-standard ABS moulding which allows for testing by insertion of a test key. When the glass is broken, the micro-switch is released, triggering an alarm transmission, by radio, to the alarm panel.

Each unit has a unique address configured during manufacture and is individually addressable by the system controller during commissioning. The unit is programmed to report at regular intervals of 5-9 minutes.

Designed and manufactured using the latest techniques and surface mount technology ensures component count is kept to a minimum, thereby maximising reliability.

The Callpoint is powered by a low-voltage dual supply Alkaline battery pack. The battery pack condition is continually monitored. The battery pack has been tested to provide a typical 5 years life cycle for normal site operations. The system indicates remaining battery capacity and a low battery condition is indicated to the controller as a fault allowing 30 days for the battery pack to be changed before unit failure.

Technical Specification
Dimensions: 87 x 87 x 61.5mm

Product Codes
Radio
517.131.004
Radio manual call point c/w transmitter, processor, radio address module, battery board (supplied with glass substitute card) - Red
517.131.039
Radio manual call point c/w transmitter, processor, radio address module, battery board (supplied with glass substitute card) - Yellow
517.131.040
Weatherproof red call point c/w transmitter, processor, battery board and glass substitute card
Hardwired
517.131.041
Hard-wired call point (For use with Sounder 5320/R)
517.131.042
Hard-wired call point (For use with all versions of controller)

Radio Sensor Sounder

Designed and manufactured using the latest techniques including surface mount technology, the combined detector/sounder offers easy and quick installation with the added benefit of a lower quantity of physical devices required for a system.

The sounder part of the unit consists of its own integral Alkaline energy source providing a typical 5 year battery life and is remotely activated and monitored by the System 5000 controller. Each unit has a unique address configured during manufacture and is individually addressable by the system controller.

The address module base is compatible with the range of System 5000 heads; these include optical, heat and combined sensor heads.

The sounder element is designed as Omni-directional with an Output of 90 dBA at 1 metre, making it ideal for hotels, boarding schools and nursing homes where a detector and sounder would be required in each room.

The internal polling of the sensor is every 5 seconds, which accelerates to every 2 seconds when traces of smoke or heat are detected. The alarm is then verified twice to ensure freedom from false alarms.

Technical Specification
Dimensions: 88 x 88 x 80.6mm
Product Codes
517.131.030
Combined Multi-Sensor (Analogue Addressable Optical Smoke & Heat).
517.131.031
Combined Sounder/Analogue Optical Smoke Detector c/w VHF transmitter, UHF receiver, with 4 sensitivity settings and 90 dbA electronic sounder including 3 x “C” alkaline batteries and 3 x “AA” alkaline batteries.
517.131.032
Combined Sounder/Heat Detector c/w VHF transmitter, UHF receiver with 4 sensitivity settings and 90dbA electronic sounder including 3 x “C” alkaline batteries and 3 x “AA” alkaline batteries.

Transponders & Receivers

UHF Receivers

Product Code
517.131.028
UHF Remote Radio Receiver. Receives UHF signals from the transponder/processor.

VHF Transponders & Receivers

Product Codes
517.131.025
Transponder signal processor, receives VHF signals from local devices and transmits on UHF to receiver installed adjacent to main controller. The transponder requires 230v supply and is complete with integral PSU. Unit is fitted with 2 helical aerials.

517.131.026
Transponder for 4-zone addressable system, receives VHF signals from local devices and transmits on UHF to receiver installed adjacent to main controller. Requires 230V and is complete with an integral PSU. Unit is fitted with 2 helical aerials.

517.131.027
VHF remote radio receiver c/w integral PSU. Receives signal from VHF transmitters.

Radio Sounders

The radio sounder is a battery operated sounder remotely activated and monitored by the System 5000 controller. Each unit has a unique address configured during manufacture and is individually addressable by the system controller. Each unit is controlled individually or by zone, dependant on the system design.

The radio sounder is housed in an industry-standard, impact-resistant ABS moulding. The sounder has 2-way radio communication with the fire system controller using UHF wavebands to receive command instructions and VHF for auto reporting.

The radio sounder module 5320 has a set of monitored contacts for the wiring of a remote call-point, thereby providing a very cost effective component.

Designed and manufactured using the latest techniques and surface mount technology ensures component count is kept to a minimum, thereby maximising reliability.

The sounder is powered by a low-voltage dual supply Alkaline battery pack. The battery pack condition is continually monitored. The battery pack has been tested to provide a typical 5 years life cycle for normal site operations. The system indicates remaining battery capacity and a low battery condition is indicated to the controller as a fault allowing 30 days for the battery pack to be changed before unit failure.

Technical Specification
Dimensions: 88 x 88 x 80.6mm

Product Codes
Red Sounders
517.131.007
Electronic radio sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board.
517.131.043
Electronic radio sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board.
517.131.050
Red Master radio sounder c/w connections for up to 1 monitored slave voice sounder unit, VHF transmitter, UHF receiver, processor, radio address module.
517.131.051
Red Slave radio sounder - For connection to 5-5350.
517.131.049
Red radio sounder with auxiliary contact input.
White Sounders
517.131.044
Electronic radio sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board.

Radio Strobe

Product Codes
Red Strobe
517.131.047
Red radio strobe unit.

White Strobe
517.131.048
White boxed radio red strobe unit.

Radio Sounder and Strobe

Product Codes
Red Sounder & Strobe
517.131.045
Radio sounder and red strobe unit.

White Sounder & Strobe
517.131.046
Radio sounder and red strobe unit

Voice Sounder

Product Codes
Red Voice Sounder
517.131.052
Red voice sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller.

White Voice Sounder
517.131.054
White voice sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller.

Voice Sounder and Strobe

Product Codes
Red Voice Sounder& Strobe
517.131.053
Voice sounder/strobe c/w VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller.
517.131.056
Weatherproof voice sounder c/w VHF transmitter, UHF receiver, processor , radio address module, battery board, 4 on-board messages activated from any EMS controller.
517.131.057
Master Voice Unit c/w connections for up to 1 monitored slave voice sounder unit. VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller.
517.131.058
Slave Voice Unit for connection to 5-5381 with it's own monitored battery supply.
White Voice Sounder & Strobe
517.131.055
Voice sounder/strobe c/w VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller.

Aerials & Ancillaries

UHF Antenna

Product Codes
517.131.022
UHF high gain aerial.
517.131.023
UHF helical antenna c/w BNC connector.
517.131.024
UHF high gain directional aerial c/w wall mounting bracket, extension pole and 10m low loss RG213 cable.

VHF Antenna

Product Codes
517.131.003
VHF aerial c/w 20m RG213 coax cable.
517.131.020
VHF dipole half wave antenna c/w 10M RG58 cable and bracket.
517.131.021
VHF helical aerial c/w BNC connector.

Interface Modules

Product Codes
517.131.008
Interface input/output unit (used for output signals to activate other equipment) c/w transmitter, processor, radio address module, battery board.
517.131.059
Addressable Interface input/output unit (used for output signals to activate other equipment) c/w transmitter, processor, radio address module, battery board.
517.131.060
Interface input/output unit (used for output signals to activate other equipment) c/w transmitter, processor, radio address module, battery board, external antenna and housed in metal case.
517.131.061
Plant I/O shunt unit - for plant isolation during test mode (4 zone).

Service Spares

Product Codes
517.131.033
Analogue addressable optical smoke sensor (Replacement only).
517.131.034
Heat sensor (Replacement only).
517.131.035
Addressable transmitter/processor/battery.
517.131.036
Addressable optical smoke sensor (Replacement only).
517.131.037
Addressable Heat sensor (Replacement only).
517.131.038
Addressable transmitter/processor/battery.

APPROVALS LISTING OF COMPANY EQUIPMENT

Thorn Security Limited is registered by British Standards Institution to BS5750 : Part 1

Note: That while every effort is made to keep this document updated, some approvals will be renewed and new approvals will be acquired between updates. Any queries, reference approvals, should be made to the Approvals Engineer [TYCO SAFETY PRODUCTS} Sunbury-on-Thames.

The approvals obtained for company equipment are listed in Table 1. The approval bodies are identified by the following abbreviations:-

AMSA	Australian Maritime Safety Authority.
ABS	American Bureau of Shipping.
BT	British Telecom.
BASEEFA	British Approval Service for Electrical Equipment in Flammable Atmospheres.
BR	Brunamalastofnun Rikisins [Iceland Govt. Approval].
BSI	British Standards Institute.
BV	Bureau Veritas [France].
CCG	Canadian Coastguard.
CCR	China Corporation Register of Shipping.
CCS (ZC)	China Classification Society.
CIRL	Construction Industry Research Laboratory [Australia].
CSA	Canadian Standards Association.
DDRK	DDR Schiffsrevision und Klassifikation [Germany].
DMA	Danish Maritime Authority [Søfartsstyrelsen].
DOT	Department of Transport [UK] - not used. Now Marine Certification Association [MSA].
DNV	Det Norske Veritas.
DTI	Department of Trade and Industry.
FM	Factory Mutual [USA].
GL	Germanischer Lloyd.
HRS	Hellenic Register of Shipping
IPTT	An Roinn agus Telegrafa [Irish Posts, Telephones and Telegraphs].
IR	India Radiology.
KM & PA	Korean Marine and Port Authority.
KRS	Korean Register of Shipping.
LPCB	Loss Prevention Certification Board.
LRS	Lloyds Register of Shipping.
MIE	Spanish Ministry of Industry and Energy
MOI	Italian Ministry of the Interior.
MSA	Marine Certification Association
NACOSS	National Approval Council for Security Systems.
NC	Not Coded.
NKK	Japanese Register of Shipping.[Nippon Kaiji Kyokai].
NMA(S)	National Maritime Administration [Sweden, Sjöfartsverket].
NMD	Norwegian Maritime Directorate [Sjøfartdirektortet].
NSI	Nederlands Shipping Inspectorate.
NPTT	Dutch Post Office.
NRC	Nuclear Regulatory Commission [USA].
NRPB	National Radiological Protection Board [UK].
NSTC	China - National Supervisory Test Centre China.
PRS	Polish Register of Shipping.
PSB	Productivity Standards Board of Singapore's Product Listing Scheme (PLS)
PTB	Physikalisch Technisches Bundesanstalt [Germany].
RA	Radiocommunications Authority [DTI]
RINA	Registro Italiano Navale [Italy].
RNR	Rumanian Register of Shipping.
RRS	Maritime Register of Shipping [Russia].
SAA	Standards Association of Australia.
SSL	Scientific Services Laboratory of Australia
UL	Underwriters' Laboratories of the United States.
ULC	Underwriters' Laboratories of Canada
USCG	United States Coastguard.
VdS	Verband der Sachversicherer e.V. [Association of Property Insurers] (Germany).

Note: Items in Table 1 with a '' against the date, indicates that approvals have been applied for but not yet been received.*

TABLE 1: APPROVALS LISTING OF COMPANY EQUIPMENT

Type	Description	Authority
601	Intrinsically Safe System [Ex ia]	ABS, BASEEFA [82254] CCS (ZC), PRS, RINA, RNR NKK
602	Analogue Addressable Intrinsically Safe System [Ex ia]	BASEEFA [89Y2204], NKK PRS, RNR
1700	1-3 Zone Fire Detection System	LPCB Approved to BS3116 NSTC
1700	4-64 Zone Fire Detection System	LPCB Approved to BS3116 NSTC
1700 TNO	4-64 Zone Fire Detection System	TNO(Netherlands)
BG3	Weatherproof/Intrinsically Safe Conventional Callpoint	ATEX, BASEEFA,CENELEC
C2440	Charger	BT, RINA
CM 520		CCS (ZC), ABS, BV, DMA, DNV, MSA, GL, KRS LPCB, LRS, NKK, NMA(S) PRS, RNR, RRS, USCG, NMD
CP 200	Call Point	GL, LRS, NKK, RNR, RRS AMSA, CCS (ZC),GL,CCR. KM & PA
CP 210, 220, 230, 240, 260, 270		LRS, NKK - (not 270) AMSA - (230 only) CCR - (230 only) GL - (230 only) CCS (ZC) - (230 only), RNR
CP 250		LRS, NKK, RRS,CCS(ZC),RNR
CP 520/CP510		ABS, DMA, MSA, GL, KRS LRS, NKK, NMA(S), RNR RRS, USCG, NMD,DNV, BV,CCS(ZC)
CP 530		ABS, DMA, DNV, MSA GL, KRS, LRS, NKK NMA(S), RNR, RRS, USCG, BV, NMD, CCS(ZC)
CP 540Ex		BV, DNV, NKK,CCS,LRS
CP920		LPCB
CP930		LPCB
DB3	Flameproof Horn Sounder	ATEX, BASEEFA, CENELEC
DHM35/69		DNV CCR-(69 only) MSA-(69 only)
DM 520		ABS, BV, CCS (ZC), DMA DNV, MSA, GL, KRS, LPCB LRS, NKK, NMA(S), PRS, RNR RRS, USCG, NMD
H600, H601	Heat Detector	ABS, BV, CCS (ZC) DMA - (not H600), DNV MSA, GL - (not H600), KRS LPCB, LRS, NKK, RRS, CCR
H602, H900, H901,H902	Heat Detector	ABS, AMSA (H602 & H902), BV CCR, CCS (ZC) DMA - (H602 only), DNV, MSA GL - (not H900), KRS, LPCB LRS, NKK NSTC - (H602/902 only), RRS
H604	Heat Detector	ABS, BV, CCS (ZC), DNV, GL KRS, LRS, NKK
H904	Heat Detector	ABS, GL, KRS, LRS, NKK,DNV CCS(ZC)
IF500Ex		BASEEFA, BV, LRS
LI520		ABS, BV, CCS (ZC), DMA DNV, MSA, GL, KRS, LPCB LRS, NKK, NMA(S), PRS RNR, RRS, USCG
M300Ex	Detector Base [I.S.]	BASEEFA, KRS, LRS, RNR
MS302Ex	Flame Detector [I.S.]	ABS, AMSA, BASEEFA, BV CCS (ZC), DMA, DNV, MSA GL, KRS,LRS, RNR

APPROVALS LISTING OF COMPANY EQUIPMENT

Type	Description	Authority
M500Ex	Intrinsically Safe Detector Base	ABS, LPCB, DNV, KRS LRS, RNR, USCG
MD501Ex	Intrinsically Safe Analogue Addressable Heat Sensor	ABS, BASEEFA, BV, CCS (ZC) DNV, GL, KRS, LRS, NKK PRS, RNR, RRS, USCG
MF501Ex	Analogue Addressable Ion Chamber Sensor [I.S.]	ABS, BASEEFA, BV, CCS (ZC) DNV, GL, KRS, LRS, NKK NRPB, PRS, RNR, RRS, USCG
MR501Ex	Analogue Addressable Optical Sensor [I.S.]	ABS, BASEEFA, BV, CCS (ZC) DNV, GL, KRS, LRS, NKK, PRS RNR, RRS, USCG
MR501TEx	Analogue Addressable High Performance Optical Sensor [I.S.]	BASEEFA
MS502Ex	Analogue Addressable Infra Red Sensor [I.S.]	ABS, AMSA, BASEEFA, BV CCG, CCS (ZC), DNV, NMA(S) KRS
MD601 DNV,KRS,MSA	Gr. 1 Rate of Rise Heat Detector	LPCB, MIE,LRS,ABS,
MD601EX	Conventional Rate of Rise Heat Detector	ABS, DNV, (LRS,KRS,BV,NKK Pending)
MD611	Gr. 2 Fixed Temp. Heat Detector	LPCB, MIE
MD611EX	Conventional Fixed Temperature Heat Detector	ABS, DNV, (LRS,KRS,BV,NKK Pending)
612H	Heat detector 135 ° F Fixed/ R-of-R	UL, ULC
622H	Heat detector 135 ° F Fixed	UL, ULC
632H	Heat detector 200 ° F Fixed	UL, ULC
MD613	Gr. 1 Rate of Rise Heat Detector	VdS
MD623	Gr. 2 Static Heat Detector	VdS
MDU601EX	Enhanced Carbon Monoxide Fire & Heat Detector	ABS, DNV, (LRS,KRS,BV,NKK Pending)
MF601EX	Conventional Ion Chamber Smoke Detector	ABS, DNV (LRS,KRS,BV,NKK pending)
MF601	Ion Chamber Detector	NRPB, LPCB, NSTC, BV
MF601M	Ion Chamber Detector	ABS, BV, DNV, GL, KRS MSA, LRS, NKK, PRS, RRS
612I	Ionisation Smoke Detector	UL
MF613	Ion Chamber Detector	VdS
MR601	Optical Smoke Detector	LPCB, LRS, MIE
MR601M	Optical Smoke Detector	ABS, BV, DNV, GL, KRS MSA, NKK, PRS
MR601TEX	Conventional High Performance Optical Smoke Detector	ABS, DNV, (LRS,KRS,BV,NKK Pending)
612P	Photoelectronic Smoke Detector	UL, ULC, FM
MR613	Optical Smoke Detector	VdS
MR601T	High Performance Optical Smoke Detector	LPCB, MIE
612HP	High Performance Optical Smoke Detector	NEDG, UL, ULC, FM
MR613T	High Performance Optical Smoke Detector	VdS
MD901	Analogue Addressable Heat Sensor	LPCB, NSTC, MIE,LRS,ABS,DNV,KRS,MSA
912H	Heat Detector Head	UL, ULC, FM
MF901	Analogue Addressable Ion Chamber Detector	LPCB, NSTC,NRPB,RINA,RRS, USCG, BV
MF901M	Analogue Addressable Ion Chamber Detector	ABS, BV, DNV, GL, KRS, MSA LRS, NKK, PRS
912I	Ionisation Detector Head	UL, ULC, FM
MR901	Analogue Addressable Optical Smoke Sensor	LPCB, LRS, MIE
MR901M	Analogue Addressable Optical Smoke Sensor	ABS, BV, DNV, GL, KRS, MSA NKK, PRS
912P	Photoelectronic Detector Head	UL, ULC, FM
MR901T	Analogue Addressable High Performance Optical Sensor	LPCB, NSTC, MIE
MU601EX	Conventional CarbonMonoxide Detector	ABS,DNV,(LRS,KRS,BV,NKK pending)
912HP	High Performance Photoelectronic Smoke Detector Head	UL, FM
MINERVA 8		PSB,LPCB
MINERVA 16R		LPCB, NSTC
MINERVA 16E		LPCB, NSTC, PSB,TNO
MINERVA 80		LPCB, NSTC, PSB, TNO
MINERVA 80R		LPCB, NSTC
MTL	Intrinsically Safe Systems Equipment	CSA, BASEEFA
NT100	8 and 16 Zone Controllers	ABS, BV, DNV, FAB, GL, LPCB ANPI/BOSEC, LRS AB(Sweden)
NTR08/NTR16	Releasing Panels	ANPI/BOSEC
PRECEPT	Marine Fire Controller	LRS,LPCB
RM520		ABS, AMSA, BV, CCS (ZC) DMA, DNV, MSA, GL, KRS LPCB, LRS, NKK, NMA(S) PRS, RRS, USCG

Type	Description	Authority
Relay 5000		BT
Relay 5010		BT
S111, S112	IR Flame Detector	ABS, BASEEFA [812333], BV CCS (ZC), DMA, MSA, KRS LPCB, LRS, PRS, RRS, SAA VdS
S121	IR Flame Detector	ABS, BASEEFA [812333], BV CCS (ZC), CSA, DMA, MSA KRS, LPCB, LRS, SAA, VdS
S122	IR Flame Detector	ABS, BASEEFA [812333] BV, CCS (ZC), DMA, MSA KRS, LRS, SAA
S131	IR Flame Detector	ABS, BASEEFA [812333], DNV MSA,PRS, LRS, NSTC, SAA VdS
S161	I.R. Flame Detector	BASEEFA [87Y3550], DNV MSA, LPCB, LRS
S231f+	I.R. Flame Detector (Flameproof)	DMA, BASEEFA [EX94C1388] LPCB, DNV, LRS, MSA, NSTC,KFEIC,SSL
S232f+	I.R. Flame Detector (Flameproof)	DMA, BASEEFA [EX94C1388],FM
S231i+	I.R. Flame Detector (I.S.)	DMA, BASEEFA [EX94C2080] LPCB, DNV, LRS, MSA,NSTC,KFEIC,SSL
S241f+	I.R. Flame Detector (Flameproof)	DMA, BASEEFA [EX94C1388] LPCB, DNV, LRS,MSA, NSTC,KFEIC,SSL
S241i+	I.R. Flame Detector (I.S.)	DMA, BASEEFA [EX94C2080] LPCB, DNV, LRS, MSA,NSTC,KFEIC,SSL
S251f+	I.R. Flame Detector (Flameproof)	DMA, BASEEFA [EX94C1388] LPCB, DNV, LRS, MSA,NSTC,KFEIC,SSL
S252f+	I.R. Flame Detector (Flameproof)	DMA, BASEEFA [EX94C1388] FM
S251i+	I.R. Flame Detector (I.S.)	DMA, BASEEFA [EX94C2080], LRS,MSA
S261f+	I.R. Flame Detector (Flameproof)	DMA, BASEEFA [EX94C1388] LPCB,DNV, LRS, MSA,NSTC,KFEIC,SSL
S262f+	I.R. Flame Detector (Flameproof)	DMA, BASEEFA [EX94C1388] FM
SB520	Sounder Booster Module	ABS, BV, CCS (ZC), DMA MSA, GL, KRS, LPCB, LRS NKK, NMA(S), PRS, RNR RRS, USCG, DNV
SM520	Sounder Module	ABS, BV, CCS (ZC), DMA MSA, GL, KRS, LPCB, LRS NKK, NMA(S), PRS, RNR RRS, USCG, DNV
T1000	Marine Controllers	ABS, BV, CCS, DNV, GL, NKK KRS, LRS, RINA, RRS, MSA
T110	I.R. Test Source	BASEEFA [Ex84B2224]
T210	I.R. Test Source	BASEEFA [Ex84B2224]
T882	4-Zone Fire Controller	ABS, BV, CCS (ZC), CCR, DNV MSA, GL, KRS, LRS, NKK, PRS RINA, RNR, RRS, CCG,NMD,DMA, DOT
T890	80-Zone Fire Controller [Minerva Marine]	ABS, AMSA, BV, CCS (ZC) CCG, DNV, MSA, GL, KRS LRS, NKK, NMA(S), PRS, RINA RNR, RRS, USCG,DMA,NMD,DOT
T891	16-Zone Fire Controller [Minerva Marine]	ABS, BV, CCS (ZC), CCG DMA, DNV, MSA, GL, KRS NKK, NMA(S), PRS, RNR, RINA RRS, USCG, LRS, NMD,DOT
ThornNet		LPCB
TLK530		LPCB
WIRE FREEPRODUCT RANGE		LPCB(Pending)
XB8	Intrinsically Safe Beacon	BASEEFA, CENELEC
XB11	Flameproof XenonBeacon	BASEEFA, CENELEC, ATEX

Standard AutoCAD Symbols

Tyco Safety Products now has an IntraNet site devoted to users of AutoCAD Design Packages for electronic and electrical systems.

The site has been set up with a view to utilising a common approach to AutoCAD output for drawing offices using Tyco Safety Products products and systems.

Initially this site includes Standard Symbols for Tyco MX Technology & MX-Graph, Fire, CCTV and Access Products and also Diagrams for many Tyco Safety Products products supplied from the UK, this will be expanded to include all Tyco Safety Products products.

Please encourage your CAD operators to visit this website. Even if you're business does not use all these products many of the symbols, schematics and drawings may be adapted quickly and easily for other products.

If you require any further information on this or other aspects of CAD development please contact the helpdesk on +44 (0) 1932 743 327 or contact our website at www.tycosafetyproducts-europe.com.

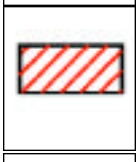
Symbol Name
FACPMTGX.dwg
ADDRESSABLE ACPM MODULE

Symbol Name
FAM.dwg
CONVENTIONAL ASPIRATING MODULE

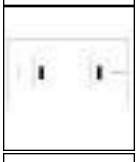
Symbol Name
FAN.dwg
CONVENTIONAL ANALYSER

Symbol Name
FASU.dwg
CONVENTIONAL ASPIRATING SAMPLING UNIT

Symbol Name
FBANTGX.dwg
ADDRESSABLE BANSHEE SOUNDER
(Variants available)



Symbol Name
FBAR.dwg
CONVENTIONAL FIRE BARRIER



Symbol Name
FBATT.dwg
CONVENTIONAL BATTERY UNIT

Symbol Name
FBELLTGX.dwg
ADDRESSABLE BELL

Symbol Name
FBI.dwg
CONVENTIONAL BELL INTERFACE

Symbol Name
FBRX.dwg
CONVENTIONAL BEAM RECEIVER

Symbol Name
FBTX.dwg
CONVENTIONAL BEAM TRANSMITTER

Symbol Name
FCHARGER.dwg
CONVENTIONAL CHARGER

Symbol Name
FCMTGX.dwg
ADDRESSABLE CONTACT MODULE

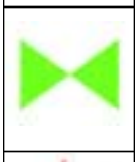
Symbol Name
FCPSTGX.dwg
ADDRESSABLE CALLPOINT

Symbol Name
FCPTGX.dwg
ADDRESSABLE CALLPOINT

Symbol Name
FCPWPTGX.dwg
ADDRESSABLE WEATHERPROOF CALLPOINT

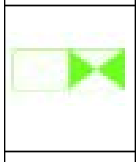
Symbol Name
FDMTGX.dwg
ADDRESSABLE DETECTOR MODULE

Symbol Name
FDRUTGX.dwg
ADDRESSABLE DOOR RELEASE UNIT



Symbol Name
FELIGHT.dwg
CONVENTIONAL EMERGENCY LIGHT

Symbol Name
FEOL.dwg
CONVENTIONAL END OF LINE UNIT



Symbol Name
FEXIT.dwg
CONVENTIONAL EMERGENCY LIGHT

Symbol Name
FFDTGX.dwg
ADDRESSABLE FLAME DETECTOR

Symbol Name
FFLTGX.dwg
ADDRESSABLE XENON BEACON

Symbol Name
FFTTGX.dwg
ADDRESSABLE FIXED TEMPERATURE HEAT DETECTOR

Symbol Name
FHD.dwg
CONVENTIONAL HEAVY DUTY RELAY

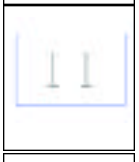
Symbol Name
FHPTGX.dwg
ADDRESSABLE HIGH PERFORMANCE OPTICAL SMOKE DETECTOR

Symbol Name
FICDP.dwg
CONVENTIONAL IONISATION DUCT PROBE

Symbol Name
FICDPTGX.dwg
ADDRESSABLE IONISATION DUCT PROBE

Symbol Name
FICTGX.dwg
ADDRESSABLE ION CHAMBER SMOKE DETECTOR

Symbol Name
FICV.dwg
CONVENTIONAL IONISTATION DETECTOR FLOOR/CEILING VOID



Symbol Name
FII.dwg
CONVENTIONAL INTRUDER INTERFACE

Symbol Name
FIRFDTGX.dwg
ADDRESSABLE IR FLAME DETECTOR

Symbol Name
FISH.dwg
CONVENTIONAL INTRINSICALLY SAFE HOUSING

Symbol Name
FJB.dwg
CONVENTIONAL JUNCTION BOX

Symbol Name
FLBTGX.dwg
ADDRESSABLE LAMP BUZZER

Symbol Name
FMEDCPTGX.dwg
ADDRESSABLE MEDC CALLPOINT

Symbol Name
FMPIM.dwg
CONVENTIONAL MPIM MODULE

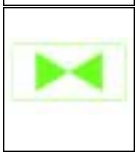
Symbol Name
FNAU.dwg
CONVENTIONAL NETWORK ATTACHMENT UNIT

Symbol Name
FOMNI660.dwg
ADDRESSABLE OMNIGUARD 660 DETECTOR

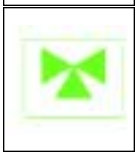
Symbol Name
FOMNI860.dwg
ADDRESSABLE OMNIGUARD 860 DETECTOR

Symbol Name
FOVALVE.dwg
CONVENTIONAL OIL VALVE

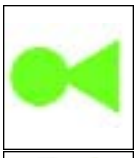
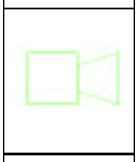
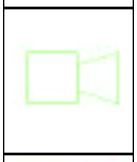
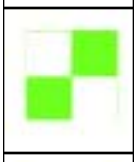
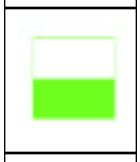
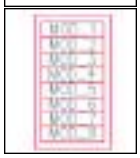
Symbol Name
FPAC1.dwg
CONVENTIONAL CABINET MOUNTED SPEAKER



Symbol Name
FPAC2.dwg
CONVENTIONAL CABINET MOUNTED BI DIRECTIONAL SPEAKER



Symbol Name
FPAC3.dwg
CONVENTIONAL CABINET MOUNTED TRI DIRECTIONAL SPEAKER

Symbol Name **FPAC4.dwg** CONVENTIONAL CEILING MOUNTED SPEAKER	 **Symbol Name** **FPAC5.dwg** CONVENTIONAL HORN	**Symbol Name** **FPANEL.dwg** CONVENTIONAL PANEL	**Symbol Name** **FPM.dwg** CONVENTIONAL PLANT MODULE
Symbol Name **FPODPTGX.dwg** ADDRESSABLE PHOTO OPTICAL DUCT PROBE	**Symbol Name** **FPOTGX.dwg** ADDRESSABLE OPTICAL SMOKE DETECTOR	**Symbol Name** **FPOV.dwg** CONVENTIONAL PHOTO OPTICAL DETECTOR FLOOR/CEILING VOID	**Symbol Name** **FPROG.dwg** CONVENTIONAL PROGRAMMER
Symbol Name **FPSU.dwg** CONVENTIONAL POWER SUPPLY UNIT	**Symbol Name** **FPUTGX.dwg** ADDRESSABLE PLANT INTERFACE MODULE	**Symbol Name** **FREP.dwg** CONVENTIONAL REPEATER PANEL	**Symbol Name** **FRI.dwg** CONVENTIONAL REMOTE INDICATOR
Symbol Name **FRMTGX.dwg** ADDRESSABLE RELAY MODULE	**Symbol Name** **FRORTGX.dwg** ADDRESSABLE RATE OF RISE HEAT DETECTOR	**Symbol Name** **FRSU.dwg** CONVENTIONAL REFERENCE SAMPLING UNIT	**Symbol Name** **FRU.dwg** CONVENTIONAL RESET UNIT
Symbol Name **FS100.dwg** ADDRESSABLE S100 FLAME DETECTOR	**Symbol Name** **FS200.dwg** ADDRESSABLE S200 FLAME DETECTOR	**Symbol Name** **FSB.dwg** CONVENTIONAL SOUNDER BOOSTER MODULE	**Symbol Name** **FSCI.dwg** CONVENTIONAL SHORT CIRCUIT ISOLATOR
 **Symbol Name** **FSDRTGX.dwg** ADDRESSABLE SOUNDER	**Symbol Name** **FSDRWTGX.dwg** ADDRESSABLE WEATHERPROOF SOUNDER	**Symbol Name** **FSDTGX.dwg** ADDRESSABLE SMOKE DAMPER INTERFACE MODULE	**Symbol Name** **FSI.dwg** CONVENTIONAL SHUNT INTERFACE
Symbol Name **FSMTGX.dwg** ADDRESSABLE SOUNDER MODULE	 **Symbol Name** **FSOUNDER.dwg** CONVENTIONAL SOUNDER	**Symbol Name** **FSPLY.dwg** CONVENTIONAL POWER SUPPLY UNIT	**Symbol Name** **FSR.dwg** CONVENTIONAL SLAVE RELAY
Symbol Name **FSUTGX.dwg** ADDRESSABLE SHOP INTERFACE UNIT	 **Symbol Name** **FT525.dwg** CONVENTIONAL INDICATOR & MODE SELECT UNIT	**Symbol Name** **FT526.dwg** CONVENTIONAL DELAY BUTTON	 **Symbol Name** **FT527.dwg** CONVENTIONAL ELECTRICAL MANUAL RELEASE UNIT
Symbol Name **FT528.dwg** CONVENTIONAL MECHANICAL MANUAL RELEASE UNIT	**Symbol Name** **FT529.dwg** CONVENTIONAL ABORT BUTTON	**Symbol Name** **FTCH.dwg** CONVENTIONAL TERMINAL CHAMBER	**Symbol Name** **FTM.dwg** CONVENTIONAL TIMER MODULE
Symbol Name **FVESLC.dwg** ADDRESSABLE VESDA LASER COMPACT	**Symbol Name** **FVESLP.dwg** ADDRESSABLE VESDA DETECTOR	**Symbol Name** **FVESLS.dwg** ADDRESSABLE VESDA SCANNER	 **Symbol Name** **FVESRT.dwg** ADDRESSABLE VESDA OPTIONAL REMOTE DISPLAY
Symbol Name **FVESSR.dwg** ADDRESSABLE VESDA SUB RACK	**Symbol Name** **FVMTGX.dwg** ADDRESSABLE VOICE MODULE	**Symbol Name** **FXIOM.dwg** CONVENTIONAL XIOM MODULE	

INDEX

Stockcode	Product Description	Page
10-115	SR2-T KAC Backbox With Two Terminals	79
171.392	Multiple tone sounder with adj. Volume control - Deep base	81
20-100	6 Inch 24v Dc Electronic Bell Weatherproof - Wormald Branded White	81
20-101	6 Inch 24v Dc Electronic Bell - Wormald Branded Red	81
20-112	2W Xenon Beacon Low Profile Red 24v Dc 2watt	88
20-113	5W Xenon Beacon Low Profile Red 24v Dc 5watt	88
20-118	Combined Roshni Sounder / Strobe. Fixed to Tone 3 Sweeping 800/970 Hz at 1 Hz	82
20-120	3W Xenon Beacon Low Profile Red 24v Dc 3watt	88
2500/021	CB200 1 ZONE CONVENTIONAL PANEL	23
2500/022	CB200 2 ZONE CONVENTIONAL PANEL	23
2500/032	C1437 4 way alarm extender board; CE requirement - PCB must be supplied c/w cabinets	23
2500/034	A1466 1 x double pole relay board (1A contacts); CE requirement - PCB must be supplied c/w cabinets	23
2500/045	PRESCIENT SPRINKLER PRE-ACTION PANEL EXTINGUISHING CONTROL PANEL	32
2500/048	Status indicator; maximum load - 3 per panel	32
2500/049	Status indicator complete with manual release and auto/manual keyswitch; maximum load - 3 per panel	32
2500/050	Status indicator complete with manual release and auto/manual keyswitch & timer hold; maximum load - 3 per panel	32
2500/051	Weatherproof 3 way status indicator; maximum load - 1 per panel	32
2500/052	Weatherproof 3 way status indicator with keyswitch; maximum load - 1 per panel	32
2500/053	Actuator Suppression Kit	32
2500/220	Control Equipment Ltd Enclosure c/w 1A PSU & space for 4 x C1437 and 2 x A1466 & 6.2AH battery set	23
2500/221	Control Equipment Ltd Enclosure c/w 3A PSU & space for 2 x C1324 or 4 x C1437 boards	23
2500/222	Control Equipment Ltd Enclosure c/w 5A PSU & space for 2 x C1324 or 4 x C1437 boards	23
2500/507	Weight monitoring system complete (1 load cell and 1 unit)	32
2500/755	PRECEPT MARINE 2 ZONE 24V DC CONTROL PANEL	37
2500/756	PRECEPT MARINE 4 ZONE 24V DC CONTROL PANEL	37
2500/757	PRECEPT MARINE 8 ZONE 24V DC CONTROL PANEL	37
2500/758	PRECEPT MARINE 16 ZONE 24V DC CONTROL PANEL	37
2500/759	PRECEPT MARINE 32 ZONE 24V DC CONTROL PANEL	37
2500/774	PRECEPT MARINE 2 ZONE 230V CONTROL PANEL	37
2500/775	PRECEPT MARINE 4 ZONE 230V CONTROL PANEL	37
2500/776	PRECEPT MARINE 8 ZONE 230V CONTROL PANEL	37
2500/777	PRECEPT MARINE 16 ZONE 230V CONTROL PANEL	37
2500/778	PRECEPT MARINE 32 ZONE 230V CONTROL PANEL	37
2501/025	Manual Release Unit	32
2501/028	Weatherproof Manual Release Unit (IP65)	32
3010	12v 2.1Ah Rechargable Battery	39
3071	12v 2.8Ah Rechargable Battery	39
3072	12v 7Ah Rechargable Battery	39
3085	12v 1.2Ah Rechargable Battery	39
3150	12v 65Ah Rechargable Battery (Np65-12)	39
40-103	DRU/24B Door Release Unit 24vdc With Keeper Plate	40
40-104	Door Release Unit 240v Ac With Keeper Plate	40
40-105	Floor Mounting Brackets For 40-103/104	40
508.013.016	T680M Power Changeover Unit	38
508.013.030	T882M 4 Zone Conventional Controller C/W PSU	36
508.013.031	T882M 4 Zone Conventional Controller W/O PSU	36
508.014.011.A	1700 2 Aperture Housing With ADT Branding	27
508.014.011.T	1700 2 Aperture Housing In Thorn Security Branding	27
508.014.013.A	1700 3 Aperture Housing In ADT Branding	27
508.014.013.T	1700 3 Aperture Housing In Thorn Security Branding	27
508.014.015.A	1700 5 Aperture Housing In ADT Branding	27
508.014.015.T	1700 5 Aperture Housing In Thorn Security Branding	27
508.014.019	1700 Aperture Blanking Plate	27
508.014.020	1700 Alarm PCB & Display	24
508.014.021	1700 Alarm Repeater Display	26
508.014.022	1700 16 Zone Repeater Display	26
508.014.023	1700 4 Zone PCB & Display	25
508.014.024	1700 8 Zone PCB & Display	25
508.014.026	1700 Sector Sounder PCB	25
508.014.027	1700 Sounder Extension PCB	25
508.014.028	1700 Relay PCB	25
508.014.029	1700 Multiplex Tx PCB	26
508.014.030	1700 Multiplex Rx PCB	26
508.014.031	1700 External Power Interface PCB	24
508.014.032	1700 1.5 Amp 240v PSU	24
508.014.033	1700 3 Amp 240v PSU	24
508.014.035	1700 Custom Legend Strips,Blank	27
508.014.036	1700 1.5 Amp 115 V PSU	24
508.014.037	1700 3 Amp 115v PSU	24
508.014.038	1700 Installation Kit For 5 Aperture Housing	27
508.014.039.A	1700 8 Aperture Housing - ADT Branded	27
508.014.039.T	1700 8 Aperture Housing - Thorn Branded	27
508.014.047	1700 Installation Kit For 3 Aperture Housing	27
508.014.048	1700 Coincidence Module PCB	27
508.014.050	1700 Alarm Unit Display Dutch TNO	24
508.014.053	1700 Battery Clamp Kit For 10Ah Batteries	27
508.014.055	S1700 KEY System 1700 Spare Key TOK001 Farnell Part Number 149-964	24
508.014.056	1700 Extinguishing Cards	26
508.020.006	Thorngraph 22" Touchscreen - Liyama Touch Pro 510 Complete With 5 Year Warranty	3
508.020.007	Dell GX110 PC for use with ThornGraph or MxGraph depending on the software ordered - includes 250Mb Iomega internal zip drive With Windows NT 4, Service Pack, Preloaded and defined with default passwords	3
508.020.101	Software Package A For 1 Network Node	3
508.020.102	Software Package B For 2-5 Network Node	3
508.020.103	Software Package C For 6 Or More Network Nodes	3
508.020.104	Software Package D For Additional Graphics Nodes On The Same Thorn Net	3
508.022.001	NTR08-011-03 Conventional Extinguishing Release Fire Controller - Finnish	29
508.022.002	NTR08-011-05 Conventional Extinguishing Release Fire Controller - Swedish	29
508.022.003	NTR08-003-02 Conventional Extinguishing Release Fire Controller - U.K.	29
508.022.004	NTR08-004-02 Conventional Extinguishing Release Fire Controller - Belgian	29
508.022.008	NT108-001-01 8 Zone Conventional Fire Controller U.K.	28
508.022.009	NT108-002-01 8 Zone Conventional Fire Controller Belgian	28
508.022.010	NT108-002-14 8 Zone Conventional Fire Controller Dutch	28
508.022.011	NTF08-009-08 8 Zone Conventional Fire Controller Finnish C/W Firemans Interface	28
508.022.014	NTF08-009-11 8 Zone Conventional Fire Controller Danish C/W Firemans Interface	28
508.022.016	NT116-001-01 16 Zone Conventional Fire Controller U.K.	28
508.022.017	NT116-002-01 16 Zone Conventional Fire Controller Belgium	28
508.022.018	NT116-002-14 16 Zone Conventional Fire Controller Dutch	28
508.022.019	NT116 ESP 16 Zone Conventional Nt Panel - Spanish	28
508.022.021	NTR16-004-07 Dual Conventional Extinguishing Release Fire Controller Dutch	29
508.022.022	NTR16-011-03 Dual Conventional Extinguishing Release Fire Controller Finnish	29
508.022.023	NTR16-011-04 Dual Conventional Extinguishing Release Fire Controller Norweigan	29
508.022.025	NTR16-011-06 Dual Conventional Extinguishing Release Fire Controller Danish	29
508.022.029	NTF16-009-08 16 Zone Conventional Fire Controller Finnish C/W Firemans Interface	28
508.022.035	NTM08-008-01 T1008 8 Zone Marine Nt Conventional Fire Controller	36
508.022.036	NTM16-008-01 T1016 16 Zone Marine Nt Conventional Fire Controller	36
508.022.037	T1016R Full Function Repeater - Up To 3 Per Panel	36
508.022.038	NT 116R NT Full Function Repeater (UK) Maximum 3 Per Panel	28
508.022.042	NTF08 Dutch 8 Zone Conventional Detection Panel With Fireman's Interface	28
508.022.043	NTF16 Dutch 16 Zone Conventional Detection Panel With Fireman's Interface	28
508.022.044	NTR Dutch 8/16 Zone Repeater For Use With Dutch NTF08 And NTF16	28
508.030.501	MXCE T540 2 ZONE CONVENTIONAL EXTINGUISHING CONTROLLER	31
508.030.502	MXCE T550 4 ZONE CONVENTIONAL EXTINGUISHING CONTROLLER	31
508.030.503	MXCE T563 3 INDICATOR STATUS UNIT	35
508.030.504	MXCE T564 4 INDICATOR STATUS UNIT WITH MODE SELECT SWITCH	33
508.200.004	1 Zone - DETEK Water/Flood Detection Control Panel	92
508.200.005	2 Zone - DETEK Water/Flood Detection Control Panel	92
508.200.006	4 Zone - DETEK Water/Flood Detection Control Panel	92
508722	MSB-6B-PV4 24 Volt 6" Bell	22
509.013.031	EOL Sounder Circuits For 1600 Controllers	86
509.013.064	T882 Terminal Field	36
509.013.068	T882 Power Supply	36
509.013.080	T882 Short Voyage Spares Kit	36
509.013.081	T882 Long Voyage Spares Kit	36
509.018.006	Active End Of Line Unit	48
509.022.001	NT100 Series Spare Commissioning Kit Included With All Panels	28, 29, 36
509.022.003	NT100 4 Way Expansion Board - Supplied Fitted To The NTF And NTR Controllers. Also Supports NTX-02,03,04 Expansion Boards	29, 36

INDEX

Stockcode	Product Description	Page
509.022.004	NTX-02 NT100 16 Way Relay Output Board (24v Dc@1a) Requires NTX-01 Expansion Board	29, 36
509.022.005	NT100 16 Way Digital Output Driver Board - Requires NTX-01 Expansion Board	29, 36
509.022.006	NT100 16 Way Digital Input Board For Use On Special NT Controller Variants Only	29
509.022.007	PRN-01 NT100 Optional Integral Printer For Use With All NT Controller Variants	29
509.022.008	PRN-02 NT100 Spare Printer Paper For PRN-01	8, 28, 29
509.022.010	T1008/16 Spare PSU For Ntm Variants	36
509.022.011	NT100 Spare PSU For NT,NTR & NTF Variants	28, 29
509.022.013	NT Flush Mount Bezel	28, 29, 36
509.022.015	T 1008/16 Spare Marine Display Module	36
509.022.016	T1000/NTM Marine CPU V1.6 Spare	36
509.022.024	T1000 Marine Repeater CPU V1.6R Spare	36
509.022.033	NT/NTR/NTF Display PCB Spare	28, 29
509.022.035	NT116R - PCB UK Nt116r CPU Board PCB	28
509.030.005	Scantronic Microcom Kit for MX Conventional Panels	31
509.030.015	MXC Spare Panel Key (Pack of 2)	31
509.030.016	MXC/ MXCE ZONE END OF LINE UNIT - SUPPLIED IN PACKS OF 8	31
509.030.017	T561 EXTINGUISHING RELEASE CALLPOINT	34
514.001.006	CP200 Callpoint Complete With Backbox. Arabic English 'Fire' Marking. Thorn Security Branded Lid	75
514.001.009	CP 220EX Red Callpoint Intrinsically Safe For Use With BASEEFA Certified Conventional System 601. English 'Fire' Marking And Thorn Security Branded Lid. Simple Apparatus Marking	66
514.001.010.A	CP 230 Red Callpoint IP67 Weatherproof Complete With LED Indicator - LPCB Approved.English 'Fire' Marking And ADT Branded Lid	75
514.001.010.T	CP 230 Red Callpoint IP67 Weatherproof Complete With LED Indicator - LPCB Approved.English 'Fire' Marking And THORN Branded Lid	75
514.001.010.Y	CP 230 Red Callpoint IP67 Weatherproof Complete With LED Indicator - LPCB Approved International Fire And Tyco Branded Lid	75
514.001.012	CP 260 M Marine Callpoint 'Fire Alarm' Complete With LED Indicator-Waterproof	76
514.001.013	CP 250 M Marine Callpoint 'Firealarm' Complete With LED Indicator-Surface	76
514.001.014	CP270 Yellow Callpoint 'Evacuate' Complete With LED Indicator And Backbox - LPCB Approved. English 'Fire Evacuate' Marking And Thorn Branded	75
514.001.017	IF500EX Intrinsically Safe Addressable Interface Module	64, 66
514.001.022	CP 530 Red Addressable IP67 Weatherproof Callpoint Complete With LED Indicator - Marine Approved.English 'Fire' Marking And Thorn Security Branded Lid.	76
514.001.023	CP 540EX Red Callpoint Intrinsically Safe For Use With IF500ex. English 'Fire' Marking And Thorn Security Branded Lid. Simple Apparatus Marking	66
514.001.042.A	CP 200 Red Callpoint 'Alert' Complete With LED Indicator Without Backbox - LPCB Approved. English 'Fire' Marking And Branded Lid	75
514.001.042.T	CP 200 Red Callpoint 'Alert' Complete With LED Indicator Without Backbox - LPCB Approved. English 'Fire' Marking And Thorn Branded Lid	75
514.001.042.Y	CP 200 Red Callpoint 'Alert' Complete With LED Indicator Without Backbox - LPCB Approved. International Fire Marking And Tyco Branded Lid	75
514.001.043.A	CP210 Red Callpoint 'Evacuate' Complete With LED Indicator Without Backbox - LPCB Approved. English 'Fire Evacuate' Marking And ADT Branded	75
514.001.043.T	CP 210 Red Callpoint 'Evacuate' Complete With LED Indicator Without Backbox - LPCB Approved. English 'Fire Evacuate' Marking And THORN Branded	75
514.001.043.Y	CP210 Red Callpoint 'Evacuate' Complete With LED Indicator Without Backbox - LPCB Approved. International Fire Marking And Tyco Branded	75
514.001.046	CP 520 Red Addressable Callpoint Complete With LED Indicator Without Backbox - Marine Approved English 'Fire' Marking And Thorn Security Branded Lid.	76
514.001.049.A	CP 920 Red Addressable Callpoint Complete With LED Indicator Without Backbox - LPCB Approved. English 'Fire' Marking And ADT Branded Lid	76
514.001.049.T	CP 920 Red Addressable Callpoint Complete With LED Indicator Without Backbox - LPCB Approved. English 'Fire' Marking And THORN Branded Lid	76
514.001.049.Y	CP920 Red Addressable Callpoint Complete With LED Indicator Without Backbox - LPCB Approved. International Fire Marking And Tyco Branded Lid	76
514.001.050.A	CP 930 Red Addressable IP67 Weatherproof Callpoint Complete With LED Indicator - LPCB Approved English 'Fire' Marking And ADT Branded Lid	76
514.001.050.T	CP 930 Red Addressable IP67 Weatherproof Callpoint Complete With LED Indicator - LPCB Approved English 'Fire' Marking And THORN Branded Lid	76
514.001.050.Y	CP 930 Red Addressable IP67 Weatherproof Callpoint Complete With LED Indicator - LPCB Approved International Fire Marking And Tyco Branded Lid	76
514.001.052	CP 950EX MEDC Weatherproof Intrinsically Safe Callpoint With Integral Analogue Addressable Module	66
514.001.053	IF 520EX MEDC Heavy Duty Intrinsically Safe Callpoint With Integral Analogue Addressable Module	66
514.001.054.A	CP937 Red Addressable IP55 Outdoor Callpoint.Based On The KAC Series 7000 - ADT Branded.	76
514.001.055	Eexd MEDC SM87BG Heavy Duty Alloy Breakglass With Integral CP530 Potted Addressable Module	65
514.001.056	Spare Glass & O Ring Assembly For SM87BG	65
514.001.057	CP200E Conventional Callpoint With European Fire Symbol And Glass Complete With LED Indicator	75
514.001.058	Breakglass Callpoint, Red GRP material, Weatherproof, IP66/67 (BG3W4LBN)	65
514.001.059	Breakglass Callpoint, GRP material, Certified EExia IIC T4, IP66/67, ATEX EX II 1G (BG3I4NBN)	65
514.001.060.A	CP211 Red MXC Callpoint 'Evacuate' Complete With LED Indicator Without Backbox - LPCB Approved. English 'Fire Evacuate' Marking And ADT Branded.	75
514.001.060.T	CP211 Red MXC Callpoint 'Fire/Evacuate' Complete With LED Indicator Without Backbox - LPCB Approved. International Fire Marking and glass, Thorn Branded	75
514.001.060.Y	CP211 Red MXC Callpoint 'Fire/Evacuate' Complete With LED Indicator Without Backbox - LPCB Approved. International Fire Marking and glass, Tyco Branded	75
514.001.061	Breakglass Callpoint GRP Weatherproof marked simple appartus. (BG3W4NBNZ)	65
514.001.512	CP530 MODULE Analogue Addressable Potted Module Only For Use In Alternative Callpoints Or Other Similar Devices	76
514.002.002.A	BOMB ALERT White Keyswitch In Callpoint Housing. English 'Bomb Alert' Marking With ADT Branded Lid	75
515.001.003	ZF121 Callpoint Glass(Pack 10) For Service Spares The ZF121 Is A Square Metal Fronted AFA MINERVA Callpoint Typically Used On Firefinder, System 1100 ,ZF/System1200, CP And CT Systems	79
515.001.009	CP100A Glass Unscored (Pk10) For Service Spares	79
515.001.010	Walsall Callpoint Glasses (Pack 10) For Service Spares	79
515.001.014	P200/500/900 Spare Glasses, White Arabic Text On Clear Background (Pack-5)	79
515.001.021	Red Surface Mounting Back Box For CP200/500 & 900 Callpoints	79
515.001.023	CP200/500/900 Spare Glasses For CP200N/CP500N, White Dutch Text On Clear Background (Pack 5)	79
515.001.024	CP200/500/900 Spare Glasses, White Arabic/English Text With Thorn Security Logo On White Background (Pack 5)	79
515.001.025	CP200/500/900 Spare Glasses, Clear English Text On White Background. No Logo (Pack 5	79
515.001.026	Black Callpoint Bezel For CP200/500/800/900	76
515.001.027	Deformable Operating Unit With English Text For Use In Place Of Glasses	79
515.001.028	Callpoint Hinged Cover For Use On CP200, 800 And 900 Series Call-Point	76
515.001.029	STI6530 Red Stopper For Use With Most Flush Mount Callpoints Up To 100mm Square	77
515.001.030	STI6531 Red Stopper For Use With Most Surface Mount Callpoints Up To 100mm Square (Including CP Series)	77
515.001.031	STI6532 Red Stopper With Integral Sounder For Use With Most Flush Mount Callpoints Up To 100mm Square (Including CP Series)	77
515.001.032	STI6533 Red Stopper With Integral Sounder For Use With Most Surface Mount Callpoints Up To 100mm Square (Including CP Series)	77
515.001.033	IPO36 Stopper Break Seal Kit For Fitting To Stopper, Stopper II And Weather Stopper	77
515.001.034	STI1230 Red Stopper II For Protecting Larger Callpoints Such As CP230 And CP930 Up To 140mm Square	77, 78

INDEX

Stockcode	Product Description	Page
515.001.035	STI3150 Red Weather Stopper II For Weather Proofing And Protecting Larger Callpoints Such As CP230 And CP930 Up To 140mm Square	77, 78
515.001.036	STI6535 Red Weather Stopper For Weather Proofing And Protecting Callpoints And Other Devices Up To 100mm Square	77, 78
515.001.037	STI6400 Exit Stopper - Red Emergency Exit Alarm - Battery Operated	78
515.001.038	STI6200 Fire Extinguishing Theft Stopper - Red - Battery Operated	78
515.001.039	CO23 Spare key for Exit STOPPER	78, 79
515.001.041	Spare Key For IF520EX Callpoint And Other MEDC SM87PB Based Callpoints	66
515453	612H Conventional 135F Rate Of Rise Heat Detector - UL Listed - Grinnell Branded	45
515455	632H Conventional Heat Detector 200F Degrees Fixed Temperature - UL Listed - Grinnell Brand	45
515456	612I Conventional Ion Chamber Detector - UL Listed - Grinnell Branded	45
515457	612P Conventional Optical Smoke Detector - UL Listed-Grinnell Branded	44
515458	612PH Conventional High Performance Optical Smoke Detector - UL Listed - Grinnell Branded	44
515461	912H Analogue Addressable Fixed/ Rate Of Rise Heat Detector - UL Listed-Grinnell Branded	42
515462	912I Analogue Addressable Ion Chamber Smoke Detector -UL Listed-Grinnell Branded	42
515463	912P Analogue Addressable Optical Smoke Detector - UL Listed - Grinnell Branded	41
515464	912PH Analogue Addressable High Performance Optical Smoke Detector -UL Listed - Grinnell Branded	41
515467	4B UL 4B Lo Pro Detector Base (4") Grinnell Branded	48
515468	6B UL 6B Lo Pro Detector Base (6") -Grinnell Branded	48
515472	M900K 900 Series Smart Card Address Key	53
515474	M900F Smart Card Address Key Programmer Freestanding	53
515475	M900C Smart Card Address Key Programmer For Use With A Laptop Computer Running MINERVA/TFX Configuration Software - CONSYS	53
515484	Spare Fireray 2000 Beam Detector Transmitter	69
515485	Spare Fireray 2000 Beam Detector Receiver	69
515487	Spare Fireray2000 Main PCB	69
515590	600RBA UL Approved M600 Series Relay Base Assembly	52
515591	900RBA UL Approved M900 Series Relay Base Assembly	52
516.009.006	S111 Infra Red Flame Detector Solar Blind Plug And Socket Connection	60
516.009.007	S112 Infra Red Flame Detector Non Solar Blind Plug And Socket Connection	60
516.009.008	S121 Infra Red Flame Detector Solar Blind Screw Terminal Connections	60
516.009.014	S121 Infra Red Flame Detector Solar Blind Screw Terminal Connections (Pyrotronics) FM Approved	60
516.009.019	S122 Infra Red Flame Detector Non Solar Blind Screw Terminal Connections (Pyrotronics)	60
516.009.022	S161 Infra Red Flame Detector Solar Blind Complete With Built In Intrinsically Safe Isolation Area	60
516.009.023	S131 Infra Red Flame Detector Solar Blind	60
516.009.028	S131 Infra Red Flame Detector Solar Blind Pyrotronics	60
516.014.017	H600 60°C Fixed Temp Heat Detector	65
516.014.018	H900 90°C Fixed Temp Heat Detector	65
516.014.019	H602 60°C Fixed Temp Heat Detector C/W Local Indicator	65
516.014.020	H902 90°C Fixed Temp Heat Detector C/W Local Indicator	65
516.014.021	H601 60°C Fixed Temp Heat Detector - Remote Indicator	65
516.014.025	H904 90°C Fixed Temp Heat Detector C/W Local Indicator Intrinsically Safe	65
516.014.026	H904 90°C Fixed Temp Heat Detector C/W Local Indicator Intrinsically Safe	65
516.015.006.A	FR2000 Optical Beam Smoke Detector - ADT	69
516.015.006.T	FR2000 Optical Beam Smoke Detector-Thorn	69
516.015.007	Fireray 2000 Retro-reflector 100x100mm Each. Can be Used Individually or in Banks of 6 for Longer Range	69
516.015.008	Fireray 2000 Alignment Tool	69
516.015.009	STI9625 Beam Detector Guard - For Use With Fireray 2000 Beam Detectors And Other Large Detectors	78
516.015.011	Fireray 50R 5- 50 Metre Reflective Beam Smoke Detector 12V-24Vdc	69
516.015.012	Fireray 100R 50-100 Metre Reflective Beam Smoke Detector 12V- 24Vdc	69
516.016.005	LD40-BLUE High Resistance Sensor Cable Blue-200m Reel	70
516.016.006	LD-40-BLCK High Resistance Sensor Cable Black-200m Reel (Nylon Sheath Suitable For Petrochemical Exposure Etc)	70
516.016.010	LD40 EOL Termination Kit	70
516.016.011	LD40 In-Line Jointing Kit	70
516.016.012	LD40 ANALYSER MODULE. ALARMLINE SERIES 4LHD K82012	70
516.016.111	MXF100 CONTROLLER C/W 3 TIER WALL MOUNTED CABINET AND PSU	71
516.016.112	MXF-SL SENSOR LINE THERMOPLASTIC SENSOR CABLE (1KM REEL)	71
516.016.113	MXF-SS SENSOR TUBE STAINLESS STEEL SENSOR CABLE (1KM REEL)	71
516.018.001	VLP-012 LaserPLUS Detector + Programmer + Display	55
516.018.002	VLP-002 LaserPLUS Detector + Display	55
516.018.003	VLP-000 LaserPLUS Detector	55
516.018.004	VLS-214 FD7 Scanner + Programmer + Display	56
516.018.005	VLS-204 FD7 Scanner + Display	56
516.018.006	VLS-200 FD7 Scanner	56
516.018.007	VLS-314 FD12 Scanner + Programmer + Display	56
516.018.008	VLS-304 FD12 Scanner + Display	56
516.018.009	VLS-300 FD12 Scanner	56
516.018.010	VLC-500-RO VESDA LaserCOMPACT With Relay Outputs	55
516.018.011	VLC-505-VN VESDA LaserCOMPACT with VESDAnet Interface	55
516.018.013	VLP-400 LaserPLUS Detector With Fire/Ok LED	55
516.018.016	VLS-600 FD7 LaserPLUS Scanner With FIRE OK LED	56
516.018.019	VLS-700 FD12 LaserPLUS Scanner With FIRE OK LED	56
516.018.101	VRT-100 Remote Programmer	56
516.018.102	VRT-200 Remote Display Including 7 Relays	56
516.018.103	VRT-300 Remote VESDAnet Socket	56
516.018.104	VRT-400 Remote Scan Display Including 7 Relays	56
516.018.106	VRT-600 Remote Detector Display - No Relays	56
516.018.107	VRT-700 Remote Scanner Display - No Relays	56
516.018.108	VRT-800 Remote Scanner Display With 12 Relays	56
516.018.119	VRT-J00 LaserCOMPACT Remote Display Complete With 7 Relays	56
516.018.120	VRT-K00 LaserCOMPACT Remote Display With No Interface Relays	56
516.018.201	VSR-2000 19" Subrack With 1 Detector Display + 3 Blanks	57
516.018.203	VSR-2210 19" Subrack Two Detector Displays, Programmer And 1 Blank	57
516.018.204	VSR-2221 19" Subrack With 3 Detector Displays And Programmer	57
516.018.206	VSR-2222 19" Sub Rack With Four Detector Displays	57
516.018.210	VSR-CUSTOM Custom Sub-Rack Housing Includes Cost Of Custom Building 4 Vsu Sub Rack Units	57
516.018.214	VSU-E Blank Scanner Sub-Unit With 7 Interface Relays For Custom Sub-Racks	57
516.018.219	VSU-J LaserCOMPACT Display Sub-Unit With 7 Relays For Ordering In Custom Sub-Racks	57
516.018.260	VSU-0 Blank Sub Unit	57
516.018.261	VSU-1 Programmer Sub Unit	57
516.018.262	VSU-2 Detector Display Sub Unit+7 Relays	57
516.018.265	VSU-5 Blank Subunit With 7 Relays	57
516.018.268	VSU-8 Scanner Display Subunit With 12 Relays	57
516.018.269	VSU-9 Blank Display Subunit With 12 Relays	57
516.018.270	VESDA Scanner Decal-Swedish	58
516.018.301	020-052 19 Inch Rack Enclosure (2 Rows)	57
516.018.302	020-055 19 Inch Rack Enclosure (5 Rows)	57
516.018.303	020-050 IP65 Enclosure	57
516.018.401	VHH-1000 Hand Held Programmer Plus Leads	57
516.018.402	VHX-0200 PC Link HLI (High Level Interface) Plus Leads (Mk2)	57
516.018.403	VSW-004 Vconfig Basic Configuration Software	57
516.018.404	VSW-002 Aspire For Windows Aspirating Design Software	57
516.018.407	014.015 VESDA 24v Dc 2a Power Supply and Charger	57
516.018.501	VSP-002 Detector Display (Spare)	58
516.018.502	VSP-004 Scanner Display (Spare)	58
516.018.503	VSP-001 Programmer (Spare)	58
516.018.504	VSP-005 Filter Cartridge (Spare)	58
516.018.505	VSP-019 Filter Cover Door (Spare)	58
516.018.506	VSP-006 Spare Detector Chassis + Manifold	58
516.018.508	VSP-008 Spare Remote Termination Card 7 Relays	58
516.018.509	VSP-009 Spare Scanner Chassis + Manifold	58
516.018.514	VSP-014 Spare Header Termination Card 7 Relays	58
516.018.515	VSP-015 Spare Aspirator Fan	58
516.022.001	MS302EX Infra Red Flame Detector	63
516.030.002	MF501EX Analogue Addressable Ion Chamber Smoke Detector	62
516.031.002	MR501EX Analogue Addressable Optical Smoke Detector	63
516.031.005	MR501TEX Analogue Addressable High Performance Optical Smoke Detector	62
516.032.001	MS502EX Addressable Infra Red Flame Detector	63
516.033.002	MD501EX Analogue Addressable Heat Detector	63
516.033.011	T4E60X T54B Point Type Heat Detector - 60°C	64
516.033.012	T4E90X T54B Point Type Heat Detector - 90°C	64
516.033.013	T4E100X T54B Point Type Heat Detector - 100°C	64

INDEX

Stockcode	Product Description	Page
516.033.014	T4E145X T54B Point Type Heat Detector - 145°C	64
516.037.003	S231F+ Triple IR Flame Detector With Conventional Circuit I/F	59
516.037.004	S231I+ Triple IR Flame Detector With Convenitonal I/F	59
516.037.015	S232f+ Triple Channel Ir Flame Detector With Conventional Detection Zone Interface	59
516.038.003	S241F+ Triple IR Flame Detector With 4 To 20mA Interface	59
516.038.004	S241I+ Triple IR Flame Detector With 4 To 20mA I/F	59
516.039.003	S251F+ Triple IR Flame Detector With Thorn Analogue Addressable I/F	59
516.039.004	S251I+ Triple IR Flame Detector With Thorn Analogue Addressable I/F	59
516.039.015	S252f+ Triple Ir Flame Detector With MINERVA Addressable Interface	59
516.040.002	S261F+ Triple IR Flame Detector With Relay Outputs	59
516.040.012	S262F PLUS S262f Plus Triple IR Flame Detector With Alarm And Fault Relay Output Interface	59
516.050.001.A	MF601 Conventional Ion Chamber Detector LPCB Approved	45
516.050.001.T	MF601 Conventional Ion Chamber Detector LPCB Approved	45
516.050.004.Y	MF601Ex Conventional Ion Chamber Detector	62
516.050.031	612I Conventional Ion Chamber Detector - UL Listed - Thorn Security	45
516.050.041.W	MF613 Conventional Ion Chamber Detector - VdS Approved	45
516.050.401	MF601M Conventional Ion Chamber Smoke Detector Marine Approved	45
516.051.001.A	MF901 Analogue Addressable Ion Chamber Smoke Detector -LPCB Approved	42
516.051.001.T	MF901 Analogue Addressable Ion Chamber Smoke Detector -LPCB Approved	42
516.051.001.Y	MF901 Analogue Addressable Ion Chamber Smoke Detector -LPCB Approved	42
516.051.031	912I Analogue Addressable Ion Chamber Smoke Detector -UL Listed-Thorn Security	42
516.051.401	MF901M Analogue Addressable Ion Chamber Smoke Detector Marine Approved	42
516.052.001.A	MD601 Conventional Heat Detector Grade 1 Rate Of Rise -LPCB Approved	45
516.052.001.T	MD601 Conventional Heat Detector Grade 1 Rate Of Rise -LPCB Approved	45
516.052.001.Y	MD601 Conventional Heat Detector Grade 1 Rate Of Rise -LPCB Approved	45
516.052.011.A	MD611 Conventional Heat Detector Fixed 60°C & EN54 Pt5 Grade 2 Rate Of Rise -LPCB Approved	45
516.052.011.T	MD611 Conventional Heat Detector Fixed 60C & EN54 Pt5 Grade 2 Rate Of Rise -LPCB Approved	45
516.052.011.Y	MD611 Conventional Heat Detector Fixed 60c & En54 Pt5 Grade 2 Rate Of Rise -LPCB Approved	45
516.052.013.W	MD613 Conventional Heat Detector Grade 1 Rate of Rise - VdS Approved - ZETTLER Branded K07226455	45
516.052.022	632H Conventional Heat Detector 200F Degrees Fixed Temperature - UL Listed - Thorn Security	45
516.052.031	612H Conventional 135F Rate Of Rise Heat Detector - UL Listed - Thorn Security	45
516.052.033.W	MD623 Conventional Heat Detector 60C Fixed And EN54 PT5 Grade 2 Rate of Rise - VdS Approved	45
516.052.041.Y	MD611Ex Conventional Heat Detector - Marine Approved	63
516.052.051.Y	MD601Ex Conventional Heat Detector	63
516.053.001.A	MD901 Analogue Addressable Fixed/ Rate Of Rise Heat Detector LPCB Approved	42
516.053.001.T	MD901 Analogue Addressable Fixed/ Rate Of Rise Heat Detector LPCB Approved	42
516.053.002	912H Analogue Addressable Fixed/ Rate Of Rise Heat Detector -UL Listed-Thorn Security	42
516.054.001.A	MR601T Conventional High Performance Optical Smoke Detector - LPCB Approved	44
516.054.001.T	MR601T Conventional High Performance Optical Smoke Detector - LPCB Approved	44
516.054.001.Y	MR601T Conventional High Performance Optical Smoke Detector - LPCB Approved	44
516.054.011.Y	MR601TEx Conventional High Performance Optical Smoke Detector	62
516.054.041.W	MR613 Conventional Optical Smoke Detector	44
516.055.001.A	MR901T Analogue Addressable High Performance Optical Smoke Detector -LPCB Approved	41
516.055.001.T	MR901T Analogue Addressable High Performance Optical Smoke Detector -LPCB Approved	41
516.055.001.Y	MR901T Analogue Addressable High Performance Optical Smoke Detector -LPCB Approved	41
516.055.031	912HP Analogue Addressable High Performance Optical Smoke Detector -UL Listed-Thorn Security	41
516.056.001.A	MR601 Conventional Optical Smoke Detector - LPCB Approved	44
516.056.001.T	MR601 Conventional Optical Smoke Detector - LPCB Approved	44
516.056.001.Y	MR601 Conventional Optical Smoke Detector - LPCB Approved	44
516.056.031	612P Conventional Optical Smoke Detector - UL Listed-Thorn Security	44
516.056.401	MR601M Conventional Optical Smoke Detector Marine Approved	44
516.057.001.A	MR901 Analogue Addressable Optical Smoke Detector -LPCB Approved	41
516.057.001.T	MR901 Analogue Addressable Optical Smoke Detector -LPCB Approved	41
516.057.001.Y	MR901 Analogue Addressable Optical Smoke Detector -LPCB Approved	41
516.057.031	912P Analogue Addressable Optical Smoke Detector - UL Listed- Thorn Security	41
516.057.401	MR901M Analogue Addressable Optical Smoke Detector Marine Approved	41
516.058.001.A	MU601 Conventional Carbon Monoxide Fire Detector - LPCB Approved	44
516.058.001.T	MU601 Conventional Carbon Monoxide Fire Detector - LPCB Approved	44
516.058.001.W	MU601 Conventional Carbon Monoxide Fire Detector - LPCB Approved	44
516.058.001.Y	MU601 Conventional Carbon Monoxide Fire Detector - LPCB Approved	44
516.059.001.A	MU901 Analogue Addressable Carbon Monoxide Fire Detector - LPCB Approved	41
516.059.001.T	MU901 Analogue Addressable Carbon Monoxide Fire Detector - LPCB Approved	41
516.059.001.Y	MU901 Analogue Addressable Carbon Monoxide Fire Detector - LPCB Approved	41
516.060.021	S860 Meggitt Avionics Omniguard 860 UV/IR Flame Detector With Self Test. Stainless Steel Construction And 3/4" Standard Connection	61
516.060.022	"S860 Meggitt Avionics Omniguard 860 UV/IR Flame Detector With Self Test. Aluminium Construction And 3/4" Standard Connection. Yellow Finish	61
516.060.025	S660 Meggitt Avionics Omniguard 660 UV Flame Detector With Self Test. Stainless Steel Construction And 3/4" Standard Connection	61
516.060.026	S660 Meggitt Avionics Omniguard 660 UV Flame Detector With Self Test. Aluminium Construction And 3/4" Standard Connection. Yellow Finish	61
516.200.004	SPS/V Vertical Mounting Probe Sensor Complete With Cover For Use With DETEK Panels	92
516.200.006	SFD Face Down Sensor Pad For Use With DETEK Panels	92
516.200.007	SFD/C Protective Cover For Face Down Sensor Pad - 516.200.006 Sfd	92
516.200.010	CD/5 5 Metre Length Of Sensing Cable For DETEK Water Leak Detection Panels	92
516.200.011	CD/10 10 Metre Length Of Sensing Cable For DETEK Water Leak Detection Panels	92
516.200.012	SOL Start Of Line For Sensing Cable For DETEK Water Leak Detection Panels (Not needed For Pads	92
516.200.013	EOL End Of Line For Sensing Cable For DETEK Water Leak Detection Panels	92
516.200.014	FFI Sensing Cable Fixing Clips For DETEK Water Leak Detection Panels	92
516.200.015	CDT Sensing Cable Identification Tags For DETEK Water Leak Detection Panels	92
516.200.016	SFU Sensor Pad Face Up For DETEK Water Leak Detection Panels	92
516.800.911	901SB Universal Sounder Base for BS5839/EN54 Applications	49
516.800.912	912SB Universal UL Sounder base - For use with M900 and 800 series detectors. Requires separate 24Vd.c. Fulleon tones	49
517.001.035	DP450 Probe Tube 450mm & Exhaust	54
517.001.036	DP600 Probe Tube 600mm & Exhaust	54
517.001.037	DP750 Probe Tube 750mm & Exhaust	54
517.001.038	DP900 Probe Tube 900mm & Exhaust	54
517.001.039	DP1200 Probe Tube 1200mm & Exhaust	54
517.001.040	DP1500 Probe Tube 1500mm & Exhaust	54
517.001.120	SYSTEM 601 EOL UNIT (P-10)	64, 66, 68
517.001.130	DHM8 Deckhead Mounting Assembly For H-Series	65
517.001.181	DHM 7 Earthing Strip (Spare) For Use As Earthing Strip On Deckhead Mounts	53
517.001.184	S100/200 BRKT Flame Detector Brkt Assembly (Stainless Steel) For Use With All S100/200 Series Detectors	61
517.001.196	UC2 4,Way Barrier Housing	68
517.001.198	MT2 2,Way Zener Barrier Housing	68
517.001.199	MT5 5,Way Zener Barrier Housing	68
517.001.201	MTL728 Zener Safety Barrier	67
517.001.202	MTL788 Zener Safety Barrier	67
517.001.203	MTL3021 Galvanic Isolation Safety Barrier Not CE Approved NON EU only	67

INDEX

Stockcode	Product Description	Page
517.001.204	MTL3043 Galvanic Isolation Safety Barrier Not CE Approved Non EU only	67
517.001.205	ERL7 Earth Rail I.S.Systems	68
517.001.206	ETM7 Earth Termination Connection System	68
517.001.207	IMB7 Insulating Mounting Block	68
517.001.224	SOLO704 Adaptor Tube B - Adapts SOLO 100 / 101 Pole Sets For TYCO Detector Changers And Testers	59, 72
517.001.226	SOLO101 Extension Tube 1.3m Long For Use With 517-001-230 Telescopic Extension Pole	72
517.001.230	SOLO100 Telescopic Extension Pole 1.26m To 4.5m Long	59, 72
517.001.231	DHM69 MARINE Deckhead Mounting For M600/900 Series	53, 64
517.001.233	Carbon Monoxide Detector Field Test Kit With 24 Brickets For Use With SOLO302/330	72
517.001.234	Carbon Monoxide Fire Detector Field Test Kit Spare Bricks (Pack Of 24)	72
517.001.240	SOLO200 Universal Detector Changer For Use With Various Manufacturers Detectors	72
517.001.242	SOLO720 Spare Battery Baton For Use With SOLO450/460 Tester	72
517.001.243	SOLO724 Spare Mains/Car Battery Charger For SOLO720 Battery Baton	72
517.001.244	MTL5061 2 Channel Galvanic Isolator For Conventional Detector Zone - Used On BASEEFA Approved System 601	67
517.001.245	MTL5021 I.S. Sounder Driver	67
517.001.246	MTL7128+ Zener Safety Barrier For Conventional Detection Circuits Designed In Accordance With System 601	67
517.001.247	DX170 Enclosure For MTL5000 Or 7000 Series Barriers	68
517.001.248	DX070 Enclsoure MTL5000 Or 7000 Series Barriers	68
517.001.254	Cordless Heat Detector Tester Kit	72
517.001.255	Aerosol Smoke Dispenser Solo 330-006	72
517.001.256	Aerosol Smoke Canisters Solo A3-006	72
517.001.264	SOLO610 Protective Carry / Storage Bags - For SOLO Detector Test Kit Items and Others	72
517.017.005	VESDA LBL Sampling Point Label	57
517.017.006	VESDA LBL Aspirating Pipe Label	57
517.025.002	M300EX Mounting Base	64
517.025.010	M300/M500 Base Lock Kit	64
517.025.021	MP35 Duct Probe Unit For M300/500 Series	54
517.025.022	MB35 Flush Mounting Kit For M300/400/500 Series	64
517.025.026	T35 Skirt Changer Tool For Use With M300/400/500 Series	72
517.025.027	SMP35 Duct Probe Unit Stainless Steel For M300/500 Series	54
517.025.028	DPS450 Probe Tube Stainless Steel 450mm & Exhaust	54
517.025.029	DPS600 Probe Tube Stainless Steel 600mm & Exhaust	54
517.025.030	DPS750 Probe Tube Stainless Steel 750mm & Exhaust	54
517.025.031	DPS900 Probe Tube Stainless Steel 900mm & Exhaust	54
517.025.033	DPS1500 Probe Tube Stainless Steel 1500mm & Exhaust	54
517.025.035	SMP69 Stainless Steel Duct Probe Unit And Universal Detector Base For M600/900 Series (EN54)	54
517.025.036	MP69 Duct Probe Unit And Base For M600/900 Series (EN54)	54
517.035.002	M500EX Mounting Base	64
517.035.006	M500 Protective Cover.	64
517.035.007	M520 Anciliary Cover For Use With M520 Modules and M800 Series Ancilliaries	14
517.035.012	DM520 MINERVA Conventional Detector Module - Allows One Conventional Detection Zone To Be Interfaced To The Loop	12
517.035.017	MDM521 MINERVA Multi Circuit Conventional Detector Module - For Up To 8 Conventional Zones	12
517.035.018	DM520/M520 Detector Module And Cover AssembLED	12
517.050.001	M600/800/900 4" Universal Mounting Base for LPCB, VdS Approved Detectors	48
517.050.002.A	SA600/900 Low Profile Line Shorting Adaptor Commissioning Tool - ADT Branded	53
517.050.003.A	CA600 Low Profile Line Continuity Adaptor Commissioning Tool - ADT Branded	53
517.050.003.T	CA600 Low Profile Line Continuity Adaptor Commissioning Tool	53
517.050.004	M69 Detector Changer For Use With M600/900 Series	72
517.050.005	Pack Of 100 Detector Locking Pins For M600/900 Series	52
517.050.007	M600 Diode Continuity Mounting Base For Conventional Detection Zones Including Callpoints - BS5839 Applications Only	48
517.050.011	W500 White Plastic Coated Steel Protective Cage For M6/900 Series Detectors	53
517.050.015	Volume Adjustment Tool for MKII Sounder Base Range	49
517.050.016	Tyco MK2 Sounder Base Range Colour Code Identification Card (Must Order in Multiples of 100)	50
517.050.601	4B Lo Pro Detector Base (4") Thorn Security Branded	48
517.050.606	6B Lo Pro Detector Base (6") - Thorn Security Branded	48
517.051.002	M900K M900 Smart Card Address Key	53
517.051.007	M900F Smart Card Address Key Programmer Freestanding	53
517.051.008	M900C Smart Card Address Key Programmer For Use With A Laptop Computer Running MINERVA/TFX Configuration Software - CONSYS	53
517.051.402	M900km Smart Card Address Key Marine Approved	53
517.060.001	4651045 Meggitt Avionics Swivel Bracket In Black	61
517.060.002	70991 Meggitt Avionics Swivel Bracket In Stainless Steel	61
517.060.003	MODEL 540 HAND HELD UV/IR TEST GUN FOR USE WITH 860 SERIES DETECTORS	61
517.060.005	Airshield For Omniguard S660 And S860 Flame Detectors	61
517.131.001	24 zone analogue addressable controller, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and VDF display. 2 hardwire sounder circuits. RS232 and RS485 ports. BS5839 and EN 54 Standard. Supplied c/w 2 helical antennas (Not inc Batteries)	93
517.131.002	12 zone analogue addressable controller Panel, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and VFD display. 2 hardwire sounder circuits. RS232 and RS485 ports. BS5839 and EN 54 Standard. Supplied c/w 2 helical antennas (Not inc Batts)	93
517.131.003	VHF aerial c/w 20m RG213 coax.	97
517.131.004	Radio manual call point c/w transmitter, processor, radio address module, battery board (supplied with glass substitute card)-Red	95
517.131.005	Addressable Optical Smoke Detector with 4 sensitivity settings c/w transmitter, processor, radio address module battery board, ceiling mount	94
517.131.006	Addressable Heat Detector with 4 sensitivity settings c/w transmitter, processor, radio address module, battery board, ceiling mount	94
517.131.007	Electronic radio sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board	96
517.131.008	Interface input/output unit (used for output signals to activate other equipment) c/w transmitter, processor, radio address module, battery board	97
517.131.009	Analogue addressable optical smoke detector with 4 sensitivity settings c/w transmitter, processor, radio address module battery board, ceiling mount	94
517.131.011	96 zone analogue addressable radio LAN controller, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and VFD display. 2 hardwire sounder circuits RS232 and RS485 ports. BS5839 and EN54 Standard. C/W 2 Helical Antennas and Thermal Printer	93
517.131.012	24 zone analogue addressable radio LAN controller with printer option, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display with option for VFD display. 2 hardwire sounder circuits RS232 and RS485 ports.c/w 2 helical antennas	93
517.131.013	24 zone analogue addressable radio LAN controller, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display with option for VFD display. 2 hardwire sounder circuits RS232 and RS485 ports. Inc c/w 2 helical antennas & thermal printer	93
517.131.014	12 zone LAN analogue addressable controller Panel with printer option, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display. 2 hardwire sounder circuits. RS232 and RS485 ports. c/w 2 helical antennas	93
517.131.015	12 zone radio LAN analogue addressable controller with panel mounted event printer, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display. 2 hardwire sounder circuits. RS232 and RS485 ports. c/w 2 helical antennas & thermal printer	93
517.131.016	4 zone radio LAN addressable controller Panel, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display. 2 hardwire sounder circuits. RS232 and RS485 ports. Supplied c/w 2 helical antennas	93
517.131.017	96 zone analogue addressable controller Panel with panel mounted printer, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and VFD display. 2 hardwire sounder circuits. RS232 and RS485 ports. c/w 2 helical antennas	93
517.131.018	24 zone analogue addressable controller Panel with panel mounted printer, VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display with option for VFD display. 2 hardwire sounder circuits. RS232 and RS485 ports c/w 2 helical antennas	93
517.131.019	4-Zone Addressable Control Panel VHF receiver, UHF transmitter, 252 device capacity c/w keypad and LCD display. 2 hardwire sounder circuits. RS232 and RS485 ports. BS5839 and EN 54 Standard. Supplied c/w 2 helical antennas (batteries are not supplied)	93

INDEX

Stockcode	Product Description	Page
517.131.020	VHF dipole half wave antenna c/w 10m RG58 cable and bracket	97
517.131.021	VHF helical aerial c/w BNC connector	97
517.131.022	UHF high gain aerial	97
517.131.023	UHF helical antenna c/w BNC connector	97
517.131.024	UHF high gain directional aerial c/w wall mounding bracket, extension pole and 10m low loss RG213 cable.	97
517.131.025	Transponder signal processor, receiver VHF signals from local devices and transmits on UHF to receiver installed adjacent to main controller. The transponder requires 230v supply and is complete with integral PSU. Unit is fitted with 2 helical aerials	95
517.131.026	Transponder for 4-zone addressable system, receiver VHF signals from local devices and transmits on UHF to receiver installed adjacent to main controller. Requires 230V and is complete with an integral PSU Unit is fitted with 2 helical aerials	95
517.131.027	VHF remote radio receiver c/w integral PSU. Receives signal from VHF transmitters	95
517.131.028	UHF remote radio receiver. Receives UHF signal from transponder / processor	95
517.131.029	Heat detector with 4 sensitivity settings c/w transmitter, processor, radio address module, battery board, ceiling mount (complete)	94
517.131.030	Combined Multi-Sensor (Analogue addressable optical smoke & Heat)	95
517.131.031	Combined sounder/analogue optical smoke detector c/w VHF transmitter, UHF receiver, analogue addressable optical smoke detector with 4 sensitivity settings and 90 dbA electronic sounder including 3 x “C” alkaline batteries and 3 x “AA” alkaline batteries.	95
517.131.032	Combined sounder/heat detector c/w VHF transmitter, UHF receiver, analogue addressable heat detector with 4 sensitivity settings and 90 dbA electronic sounder including 3 x “C” alkaline batteries and 3 x “AA” alkaline batteries.	95
517.131.033	Analogue addressable optical smoke detector sensor (Replacement only)	97
517.131.034	Heat detector sensor (Replacement only)	97
517.131.035	Addressable transmitter / processor / battery	97
517.131.036	Addressable optical smoke detector sensor (Replacement only)	97
517.131.037	Addressable Heat detector sensor (Replacement only)	97
517.131.038	Addressable transmitter / processor / battery	97
517.131.039	Radio manual call point c/w transmitter, processor, radio address module, battery board (supplied with glass substitute card) - Yellow	95
517.131.040	Weather proof red call point c/w transmitter, processor, battery board and glass substitute card	95
517.131.041	Hard-wired call point (For use with Sounder 5320/R)	95
517.131.042	Hard-wired call point (For use with all versions of controller)	95
517.131.043	Electronic radio sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board Red	96
517.131.044	Electronic radio sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board - white case	96
517.131.045	Radio sounder and red strobe unit	96
517.131.046	White radio sounder and red strobe unit	96
517.131.047	Red radio strobe unit	96
517.131.048	White boxed radio red strobe unit	96
517.131.049	Red radio sounder with auxiliary contact input	96
517.131.050	Red Master radio sounder c/w connections for up to 1 monitored slave voice sounder units, VHF transmitter, UHF receiver, processor, radio address module	96
517.131.051	Red slave radio sounder - For connection to 5-5350	96
517.131.052	Red voice sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller	96
517.131.053	Voice sounder/strobe c/w VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller	97
517.131.054	White voice sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller	96
517.131.055	Voice sounder/strobe c/w VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller	97
517.131.056	Weatherproof voice sounder c/w VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller	97
517.131.057	Master Voice Unit c/w connections for up to 1 monitored slave voice sounder units, VHF transmitter, UHF receiver, processor, radio address module, battery board, 4 on-board messages activated from any EMS controller	97
517.131.058	Slave Voice Unit For connection to 5-5381 with it’s own monitored battery supply	97
517.131.059	Addressable Interface input/output unit (used for output signals to activate other equipment) c/w transmitter, processor, radio address module, battery board	97
517.131.060	Interface input/output unit (used for output signals to activate other equipment) c/w transmitter, processor, radio address module, battery board, external antenna and housed in metal case	97
517.131.061	Plant I/O shunt unit – for plant isolation during test mode (4 zone)	97
518.003.003	77CR19 Emergency Cable Release 24v D.C.	39
518.003.004	77CR19 Emergency Cable Release 240v A.C.	39
518.004.004	DRU/240 High Quality TEPG Door Release Magnet Set 240v Ac Complete With Keeper Plate	39
518.004.005	DRU/24 High Quality TEPG Door Release Magnet Set 24v.Dc Complete With Keeper Plate	39
519.001.007	Door Release Button UK Single Gang Mounting - With Danger Mains Text	39
525.001.005	Fire Notice Frame 212mm X 297mm	90
525.001.006	Fire Notice Frame 280mm X 356mm	90
525.001.007	Fire Notice Frame 483mm X 737mm	90
525.001.008	Fire Notice Frame 483mm X 367mm	90
526.001.016.T	T510 Extinguishing - Main To Reserve Change Over Keyswitch Unit With Two Keys - Thorn Branded	33
526.001.018.A	Manual Extinguishing Release Unit (Pull Handle Linked To Gas Container Via Steel Cable)	34
526.001.019.A	Extinguishing Release Hold Button Unit (To Suit Single Gang UK Style Back Box)	34
526.001.020.A	Extinguishing Abort Button Unit (To Suit Single Gang UK Style Back Box)	34
527.001.003	T5XX Top Hat Frangible Insert(Spare)	35
527.001.013	T5XX Frangible Washers (Spare) (pack of 25)	34, 35
527.001.028	Microswitch Lock Keep & Backplate For Deadlock	35
540.001.012	MK2 LMP/F Lamp (Red) / Buzzer Unit Flush Mounting Mk2 Including Single Gang Backbox. LabelLED 'Fire'.	88
540.001.013	MK2 LMP/S Lamp (Red) /Buzzer Unit Surface Mounting Mk2. LabelLED 'Fire'.	88
540.001.030	1W Xenon Beacon Low Profile Clear 24vdc 1watt	88
540.001.031	1W Xenon Beacon Low Profile Blue 24v Dc 1watt	88
540.001.032	1W Xenon Beacon Low Profile Amber 24vdc 1watt	88
540.001.033	1W Xenon Beacon Low Profile Red 24v Dc 1watt	88
540.001.038	Xenon Beacon (0.5 Joule), GRP Material, IP66, Clear Lens (XB8BB024CNR)	89
540.001.039	Xenon Beacon (5 Joule), EExd IIB T5, IP66/67 GRP Material, Red Lens, ATEX EX II 2G (XB11B02406RNBNNNR)	88
540.003.006.T	RIL M600/900 Series Remote Indicator LED Square UK Single Gang Mounting - Thorn Branded	53
540.007.001	Heavy Duty IP67 Cast Aluminium Surface Mount Red Lamp Unit 24 Dc. With Indicator Plate LabelLED 'Extinguishing System Operated'	35
540.007.002	Heavy Duty IP67 Cast Alauminium Surface Mount Red/Amber/Green Lamp Unit 24 Dc. With Indicator Plates LabelLED 'Extinguishing System- Operated / Automatic / Manual' (E3)	35
540.007.006	I3 IP67 Surface Mount Red/Amber/Green Lamp Unit 24 Dc. LabelLED 'Gas Release', 'Auto', 'Manual'	35
540.007.007	I4 IP67 Surface Mount Red/Amber/Green Lamp Unit 24 Dc With Auto/Manual Keyswitch LabelLED 'Gas Release', 'Auto', 'Manual'	35
541.001.018	1500 5 Way Zone Monitor PCB Can Be Used On Any Monitored Sounder Circuit To Take Up To 5 Spurs Into A Sounder Output. Suitable For Mounting In Control Equipment	90
545.001.007	LI520 MK2 MINERVA Line Isolator Module	11
545.001.008	MI900 Line Isolator Base For Use With M900 Detectors On MINERVA Systems (Also Compatible With TFX Systems But Not UL Approved)	52
545.001.009	LI520ASSY LI520/M520 Line Isolator And Cover AssembLED	11
546.004.006	PI521 MINERVA Plant Interface	13
546.004.007	AM921 MINERVA Aspirator Detector Interface Module For Vision Systems LaserPLUS Aspirating Systems Fits In Detectors, 7 Relay Scanners And 7 Remote Relay Termination Cards (Not Suitable For VRT-200 And VRT-400)	13

INDEX

Stockcode	Product Description	Page
547.004.001	PI/SU Din Rail Mounting Kit For Use With PI521 Or SU521	13, 14
555.180.002	MINERVA 16E Front Cover Assy (Spare)	10
555.180.003	MINERVA 80 Front Cover Assy(Spare)	10
555.180.021	CM520 MINERVA Contact Monitor Module (1 Input)	11
555.180.026	CM520/M520 Contact Module And Cover AssembLED	11
557.001.040.A	MK2 Sounder Cap Can be used with SB601 & SB602 sounders ADT Branded (Pk of 5)	49
557.001.040.T	MK2 Sounder Cap Can be used with SB601 & SB602 sounders Thorn Branded (Pk of 5)	49
557.001.040.Y	MK2 Sounder Cap Can be used with SB601 & SB602 sounders Tyco Branded (Pk of 5)	49
557.180.001	ACPM MINERVA Power Module 2.7amps Non Addressable	8
557.180.002	MINERVA Power Module 2.7amps Addressable	8
557.180.005	MINERVA 80 Way Mimic Driver Module for use with MINERVA and MX panels	7
557.180.010	MINERVA 80 Motherboard PCB (Spare)	10
557.180.012	MINERVA Multi Purpose Interface Module. Available As A Spare For MINERVA Panels And Repeaters Or For Providing Expansion Using XIOM Modules	7
557.180.014	ALXM MINERVA Addressable Loop Expansion Module (2 Loops) For Use With MINERVA 80	5
557.180.016	XIOM MINERVA Input/Output Expansion Module 16 Way for use with MINERVA or MX panels	7
557.180.021	MINERVA Plain Cover Assembly For Use With General Purpose Housings	10
557.180.022	MINERVA Terminal Chamber PCB Assembly	10
557.180.032	MINERVA General Purpose Housing Surface	10
557.180.033	MINERVA General Purpose Housing Flush	10
557.180.034	MINERVA General Purpose Expansion Housing Surface	10
557.180.035.A	MINERVA LCD Repeater For Use With MINERVA Analogue Addressable Fire Controller Systems	8
557.180.035.T	MINERVA LCD Repeater For Use With MINERVA Analogue Addressable Fire Controller Systems	8
557.180.051	Dc/Dc Convertor Module	7
557.180.052	Serial Printer Driver Kit	7, 8
557.180.054	MINERVA 16 Mounting Plate Kit (Spare)	10
557.180.055	MINERVA 8/16E Battery Fitting Kit	5
557.180.062	LEAD MINERVA Serial Printer Lead Assembly	8, 9
557.180.063	MINERVA MPIM To PC (D25) Serial Lead Assembly (As Grinnell 940558)	9
557.180.065	MINERVA 80 Battery Fitting Kit	5
557.180.076.A	MINERVA Wall Mounted Printer May Be Mounted Adjacent To Surface Mounting Controllers - ADT Branded	8
557.180.076.T	MINERVA Wall Mounted Printer May Be Mounted Adjacent To Surface Mounting Controllers - Thorn Branded	8
557.180.079	Bezel - Flush Mounting For Wall Mounting Printer 557-180-076	8
557.180.092	MINERVA Loop Power Insertion Module. Converts MINERVA 8 And 16E To Loop Powered Controllers	5
557.180.095	MINERVA Ancillary Stacking Kit For Use With Ancillary Housing 8 557-180-096	14
557.180.096.A	MINERVA Ancillary Hsg - 8 For Use With M5xx Ancillary Modules (Can Accommodate Up To 16 M520 Modules With Stacking Kit)	14
557.180.096.T	ANC8 MINERVA Ancillary Hsg - 8 For Use With M5xx Ancillary Modules (Can Accommodate Up To 16 M520 Modules With Stacking Kit)	14
557.180.097.A	ANC3 MINERVA Ancillary Hsg - 3 For Use With M5xx Ancillary Modules (Can Accommodate Up To 3 M520 Modules)	14
557.180.097.T	ANC3 MINERVA Ancillary Hsg - 3 For Use With M5xx Ancillary Modules (Can Accommodate Up To 3 M520 Modules)	14
557.180.105	Full CONSYS Software Key (Dongle)	9
557.180.106	Customer/Distributor Software Key (Dongle)	9
557.180.147	TLK V2.36 TLK Firmware Version 2.36 - Spare	4
557.180.148.A	Housing For a Combination of 2 X TLO530 OR TLD530 Communication Interfaces (Available Thorn and ADT Branded)	4
557.180.151	RS232/422 Convertor For Use With MLCD Repeater	8
557.180.152	DB9 Male To Male Gender Changer For Use With 557.180.151	8
557.180.155	MINERVA16E Version 12.1 Spare EPROM	9
557.180.156	MINERVA 80 Version 12.1 Spare EPROM	9
557.180.157	MINERVA ALXM Version 12.1 Spare EPROM	9
557.180.159	MINERVA16E Firmware Version 12.2 (With Mos Event Reporting Fix)	9
557.180.160	MINERVA 80 Firmware Version 12.2 (With Mos Event Reporting Fix)	9
557.180.161	MINERVA ALXM Firmware Version 12.2	9
557.180.163	MINERVA 16 PEPROM VERS 12.3	9
557.180.164	MINERVA 80 PEPROM VERS 12.3	9
557.180.165	MINERVA ALXM PEPROM VERS 12.3	9
557.180.167	MINERVA 16 PEPROM KIT V12.4	9
557.180.168	MINERVA 80 PEPROM KIT V12.4	9
557.180.169	MINERVA ALXM PEPROM KIT V12.4	9
557.180.200	MP MINERVA Main Processor PCB No Software Fitted	10
557.180.202	LEAD Printer Lead Assembly D Type AngLED For Use With Wall Printer	8
557.180.203	ALXM-LP Addressable Loop Expansion Module Loop Powered(2 Loops) For Use With MINERVA 80 LP	5
557.180.204	M80SPARE Motherboard Loop Powered For Use With MINERVA 80 (Spare)	10
557.180.205	LPDCM MINERVA Dc/Dc Convertor Loop Powered	7
557.180.208	Spare Keys (Used On MINERVA Controllers	10
557.180.209	Keyswitch Assembly For Use With MINERVA Controllers (Spare)	10
557.180.214	LQ 300 Epson dot matrix alarm printer - 24 pin 80 character	9
557.180.215	TLK530 Thorn Net Network Node Interface Module	4
557.180.217	LPBD521 MINERVA Loop Powered Beam Detector Interface Module For Use With Fireray 2000	13, 70
557.180.218	TLK530G Thorn Net Interface For Thorngraph PC C/W PSU And Housings	4
557.180.219	LEAD Thorn Graph To TLK-530 Connection Cable Between PC And TLK 530G	4
557.180.220	LQ80 Ribbon Black (Spare) for use with LQ 300 plus printer	9
557.180.223	MINERVA Wall Mounting Printing Ribbon (Spare)	8
557.180.234	MINERVA Customer CONSYS V12.1	9
557.180.401	T890M MINERVA Marine Analogue Addressable Controller Supplied with 1 ALXM (2 loops) but can expand to 10 Loops	5
557.180.402	T891 M MINERVA Marine Analogue Addressable Controller 2 Loops	5
557.180.403	T290 M MINERVA Marine Repeater Unit For Use With T890m	5
557.180.404	T291 M MINERVA Marine Repeater Unit For Use With T891m	5
557.180.405	T680 M MINERVA Marine Power Unit	5
557.180.406	TXX M MINERVA Marine Terminal Chamber	10
557.180.407	T891 Front Cover Assembly	10
557.180.408	T890 Front Cover Assembly	10
557.180.410	TXX M MINERVA Marine Battery Fitting Kit	5, 10
557.180.423	TM520 Timer Module - Non Addressable	11
557.180.424	TXX M MINERVA Marine ALXM	5
557.180.452	MINERVA 19" Rack Mounting Kit For Use With Surface Mounting Housings	10
557.180.454	TXX M MINERVA Marine Bulkhead Mounting Kit	5, 10
557.180.550	MINERVA16E Controller Surface Mounting Complete With P.S.U	5
557.180.553	MINERVA16E Controller Flush Mounting Complete With P.S.U	5
557.180.554	MINERVA16E Repeater Surface Mounting	5
557.180.555	MINERVA16E Repeater Flush Mounting	5
557.180.556	MINERVA 80 Controller Surface Mounting C/W One ALXM Requires P.S.U.	5
557.180.557	MINERVA 80 Controller Flush Mounting C/W One ALXM Requires P.S.U	5
557.180.558	MINERVA 80 Repeater Surface Mounting	5
557.180.559	MINERVA 80 Repeater Flush Mounting	5
557.180.560	MINERVA Power Box (Addressable) Surface Mounting Complete With 2.7 Ahr P.S.U.	8
557.180.561	MINERVA Power Box (Non-Addressable) Surface Mounting Complete With 2.7 Ahr P.S.U	8
557.180.564	MINERVA 8 Controller Surface Mounting Complete With P.S.U.	5
557.180.565	MINERVA 8 Controller Flush Mounting Complete With P.S.U.	5
557.180.566	MINERVA 8 Repeater Surface Mounting Complete With P.S.U.	5
557.180.567	MINERVA 80 Controller Arabic	5
557.180.568	MINERVA16E Controller Arabic	5
557.180.569	MINERVA 80 Controller Surface Mounting Loop Powered C/W One ALXM Requires P.S.U.	5
557.180.570	M80LP MINERVA 80 Controller Flush Mounting Loop Powered C/W One ALXM Requires P.S.U.	5
557.180.575	MINERVA16E Mandarin Version	5
557.180.576	MINERVA 80 Mandarin Version	5
557.180.623	TFX-500M 2 Loop Fire Control Panel With Red Architectural Door Grinnell Branded In 3 Tier Housing With Fcm/Ocm And 16 LED Indicator	15
557.180.624	TFX-800M Fire Detection Panel With Red Architectural Door And Grinnell Branding In 7 Tier Housing With Fcm/Odm And 80 LED Indicator	15
557.180.625	TFX400 Two Loop UI/FM Approved Fire Control Panel. Supplied In Grey With Thorn Security Branding.	15
557.180.667	940577 MINERVA MPIM To PC (D9) Serial Lead	8, 9
557.180.699	TLD530 Thorn Net Direct Line Driver PCB	4
557.180.701	MINERVA 8 Controller Dutch	5
557.180.702	MINERVA 80 Controller Dutch	5
557.180.703	MINERVA16E Controller Dutch	5

INDEX

Stockcode	Product Description	Page
557.180.722	M80 SPARE MINERVA 80 Cover Assembly Dutch (Spare)	10
557.180.831	MINERVA16E Main Processor PEPROM Vers 12	9
557.180.832	MINERVA 80 Main Processor PEPROM Vers 12	9
557.180.833	MINERVA 80 ALXM PEPROM Vers 12	9
558.004.006	C2440 C Range Charger 24v 4 Amp	40
558.004.007	TRR-243 24v Dc 3a Transformer / Rectifier Unit For Door Release Units. Includes 24v Volt Free Relay Interface.	40
558.004.013	C RANGE Housing Type D Complete With Metres	40
558.004.014	C RANGE Housing Type D	40
558.004.015	C RANGE Housing Type C Complete With Metres	40
558.004.016	C RANGE Housing Type C	40
560.001.012	12v 38Ah Battery	39
560.001.013	6v 10Ah Battery	36, 39
560.001.015	12v 17Ah Battery	39
560.001.016	12V 17AH BATTERY - INVERTED TERMINALS	39
567.001.004	RELAY 5000 Relay 5000 (2 Way Relay Unit)	90
567.005.004	RELAY 5010 Relay 5010 (5 Way Relay Unit)	90
567.005.005	RELAY 5016 Relay 5016 (8 Way Rly Unit)	90
567.007.008	240V MK4 Alarm Relay 240v Ac Mk4	90
567.007.009	24V MK4 Alarm Relay 24v Dc Mk4	90
568.001.006	5016PCB Relay 5016 PCB For 8 Relays	90
568.001.007	Relay 5000 Housing Auxiliary Relay (Small)	90
568.001.008	Relay 5010 Housing Auxiliary Relay (Large)	90
568.001.011	MINERVA Relay Module (1 X 24V DC Rated Relay)	11
568.001.013	SU521 MINERVA Shop Unit Interface	14
568.001.014	SD520 MINERVA Smoke Damper Interface Module (2 Inputs And 1 Output)	13
568.001.016	MC900 Low Power Relay For Use With Any M900 Low Profile Detector	52
568.001.017	RM520/M520 Relay Module And Cover Assemby LED	11
568.001.018	MC600 Low Power Relay For Use With Any M600 Low Profile Detector - Not Compatible With System 1600 And T880 Series Detection Panels	52
569.001.007	26V RLY Cradle Relay And Retaining Clip 2 C/O 26v Nominal 700 Ohm Coil 5 Amp Used With Relay 5000 And 5010	90
571.07	Universal Mounting Base K07226456	48
571.071	M69 Detector Locking Pin Kit (Pack Of 100) K07226458	52
576.500.004.A	Red Bell 6" 240v Ac Solenoid Operated. 'Fire' Text With ADT Branding	84
576.500.004.T	Red Bell 6" 240v Ac Solenoid Operated. 'Fire' Text With Thorn Branding	84
576.500.009.A	Bell 6" 24v.D.C.Solenoid Operated. 'Fire' Text With ADT Branding	84
576.500.009.T	Bell 6" 24v.D.C.Solenoid Operated. 'Fire' Text With Thorn Branding	84
576.501.001	Yodalarm 3" 24v Dc IP54 96db @1m Frequency 800-1000Hz 30mA	86
576.501.003	Yodalarm 8" 24v.D.C. IP54 rating 112db@1m Frequency 800-1000Hz 330mA YO8	86
576.501.004.A	Banshee 24V.DC BS5839 Low Frequency Low Profile Red - 107dba Effective - 15mA (ADT Branded)	85
576.501.004.T	Banshee 24V.DC BS5839 Low Frequency Low Profile Red - 107dba Effective - 15mA (Thorn Branded)	85
576.501.008.A	Banshee 24V DC High Frequency Low Profile Red - 105dba Effective - 25mA (ADT Branded)	85
576.501.008.T	Banshee 24V DC High Frequency Low Profile Red - 105dba Effective - 25mA (Thorn Branded)	85
576.501.011	Banshee/Bedlam Weatherproof Mains Adaptor Pack 240v A.C. To 24v D.C. Use On Any 24v D.C. Banshee Or Bedlam	85
576.501.013	IS28VCL Banshee IS28 BS5839 Low Frequency BASEEFA Certified Intrinsically Safe - Red Sounder - 98dba - 10mA Certificate NO. Ex87B2027 EE xia IIC T5 Suitable to Relplace Banshee IS22B	86
576.501.015.A	Bedlam 24V D.C. Low Profile Weatherproof - Red 117dba Effective - 30mA (ADT Branded)	85
576.501.015.T	Bedlam 24V D.C. Low Profile Weatherproof - Red 117dba Effective - 30mA (Thorn Branded)	85
576.501.019	Banshee 24v D.C. Slow Whoop Low Profile Red Dutch	86
576.501.022.A	Bell 6" 24v D.C. Motorised. 'Fire' Text With ADT Branding	81
576.501.022.T	Bell 6" 24v D.C. Motorised. 'Fire' Text With Thorn Branding	81
576.501.023.A	Bell 8" 24v D.C. Motorised. 'Fire' Text With ADT Branding	81
576.501.023.T	Bell 8" 24v D.C. Motorised. 'Fire' Text With Thorn Branding	81
576.501.024.A	IP66 Banshee Weatherproof 24V D.C. BS5839 Low Frequency Low Profile - Red 107dba Effective - 15mA (ADT Branded)	85
576.501.024.T	IP66 Banshee Weatherproof 24V D.C. BS5839 Low Frequency Low Profile - Red - 107dba Effective - 15mA (Thorn Branded)	85
576.501.030	Squashni White 24V DC	81
576.501.031	Blank Cover Plate White For Squashni	81
576.501.032.A	Flush Mounting Square (86 X 86) Bedroom Sounder 24V D.C.-White - 90dba @ 1M Typical - 7mA (ADT Branded)	85
576.501.032.T	Flush Mounting Square (86 X 86) Bedroom Sounder - 24V D.C.-White - 90dba @ 1M Typical - 7ma (Thorn Branded)	85
576.501.033.A	Banshee 24V D.C. BS5839 Low Frequency, Low Profile - White- 107dba Effective - 15ma (ADT Branded)	85
576.501.033.T	Banshee 24V D.C. BS5839 Low Frequency, Low Profile - White - 107dba Effective - 15mA (Thorn Branded)	85
576.501.034.A	MFC1SEA Red ADT UK Firecryer - Single English Message Synchronised Voice Enhanced Sounder. Message Ref. Ak	87
576.501.035.A	MFC4SUA Red ADT UK Firecryer - Four English Message Synchronised Voice Enhanced Sounder. Message Refs. Akabspae (Fire/Alert/ADT Fire Test/All Clear)	87
576.501.036.A	MFC1EA Red ADT UK Firecryer - Single English Fire Message Unsynchronised Voice Enhanced Sounder. Message Ref. Ak	87
576.501.037	MFC4DEMO Firecryer 4 Message Demo Box	87
576.501.038	Besson Wafer Sounder And Blank Cover In White	85
576.501.039.A	Motorised Bell 6" 24v.D.C. 'Fire' Text With ADT Branding. 15ma Low Power	84
576.501.039.T	Motorised Bell 6" 24v.D.C. 'Fire' Text With Thorn Branding. 15ma Low Power	84
576.501.040.A	Motorised Bell 8" 24v.D.C. 'Fire' Text With ADT Branding.	84
576.501.041	Banshee/Xenon Bracket	85
576.501.042	Banshee IP66 Backbox For Use With Loop Powered Banshees And Firecryers	85, 87
576.501.043	Red Horn Sounder, Up to 115dB(A), in GRP Material, EExd IIC T5, IP66/67, ATEX EX II 2G (DB3/D/048/N/1B/N/R)	83
576.501.100	MFC1SB Firecryer Single Message Synch Board For Use With Single Message Synchronised MINERVA Firecryers	87
576.501.101	MFC4SB Firecryer 4 Message Synch Board For Use With 4 Message MINERVA Firecryers	87
576.501.103	MFC4ENC 4 Message Synch Board Enclosure With 3 Position Keyswitch For Use With 576.501.101	87
576.501.104.A	MFC4SCA Red ADT Branded 4 Message Synchronised Firecryer With Custom Messages. Messages Must Be Specified At The Time Of Ordering	87
576.501.200	SY/R Low power red Symphoni sounder with slow sweep 500-1200Hz tone	80
576.501.201	SY/W Low power white Symphoni sounder with slow sweep 500-1200Hz tone	80
576.501.202	SYHO/R Symphoni Red High Output Sounder	80
576.501.203	SYHO/W Symphoni White High Output Sounder	80
576.501.204	SY2/R/TYCO Symphoni Red 2 Wire Sounder	80
576.501.205	SY2/W/TYCO Symphoni White 2 Wire Sounder	80
576.501.224	Flashni Red Body Red Lens, Low Profile, Shallow Base Sounder, Tone Switch	82
576.501.225	Flashni White Body Red Lens, Low Profile, Shallow Base Sounder, Tone Switch	82
576.501.226	FLASHNI Red Lens, Red Body Shallow Base, Tone selection switch, separate sounder strobe operation	82
576.501.240	Askari, Tone 3, Red Sweeping 800/970 Hz at 1 Hz	81
576.502.010	MINIMITE Secomak 24v Dc Sounder Siren - Range 370yds	86
577.001.002	Weatherproof Gasket Box 6" For Use With Solenoid Operated Bells	84
577.001.006	Flush Mounting Bracket For Use With Low Profile Banshees - White	85
577.001.022	SM520 MINERVA Sounder Driver Module	12
577.001.023	SB520 MINERVA Sounder Booster Module 15amps	12
577.001.026.A	LPBB520R Loop Powered Addressable Besson Banshee - Red - ADT Branded	85
577.001.026.T	LPBB520R Loop Powered Addressable Besson Banshee - Red - Thorn Branded	85
577.001.027	LPS520 MINERVA Line Power Sounder Module For Use With 24v Banshees (Max.6)	12
577.001.029.A	LPBB520W Loop Powered Addressable Besson Banshee - White - ADT Branded	85
577.001.029.T	LPBB520W Loop Powered Addressable Besson Banshee - White - Thorn Branded	85
577.001.032	SM520/M520 Sounder Module And Cover AssembLED	12
577.001.033	SB520/M520 Booster Module And Cover Assembled	12
577.001.035	601SB Conventional EN54:3 Sounder base - For use with M600 series detectors. Requires separate 24Vd.c. Fulleon tones	49
577.001.036	602SB Conventional 2 wire line powered EN54:3 Sounder base for use with MX Conventional panels. Fulleon tones	49
577.001.037	601SBD Conventional EN54:3 Sounder diode base - For use with M600 series detectors. Requires separate 24Vd.c. Fulleon tones	49

INDEX

Stockcode	Product Description	Page
577.001.038	602SBD Conventional 2 wire line powered EN54:3 Sounder diode base - For use with MX Conventional Panels. Fulleon tones	49
577.001.101	VM520 HSG Voice Sounder Housng For Use With Both Conventional And Analogue Addressable Fire Systems	89
577.001.102	VM520 PCB Voice Sounder PCB Module For Use With Housing 577.001.101. LPCB Approved.	89
577.001.106	Flush Mounting Loudspeaker 8,Ohms	89
577.001.107	VM520 PEPROM (IC6)	89
577.002.001	PAGER TX Pager Transmitter	9
577.002.002	Type A Alarm Pager	9
577.002.003	Type A Maintenance Pager	9
577.002.007	Pager Aerial Standard Up To 1Km	9
577.002.008	Optional Feeder Cable for UAZ (MINERVA Pager)	9
584.002.001	SPRKLR DLY Sprinkler Delay Module	90
592.001.005	T110 Adaptor For S131/161	61, 73
592.001.010	T110 PP9 Battery And Charger Kit	61, 73
592.001.011	T110 Carrying Case (Not Suitable For T210)	61, 73
592.001.012	T110 Test Source For Use With (517.001.224) SOLO704 Adaptor Tube B And SOLO100/101 Poles (517.001.230/226)	61, 73
592.001.014	T210 Adaptor S200	59, 73
592.001.016	T210 Plus Test Source For S200plus Flame Detectors Only. Suitable For Use In Hazardous Areas	59, 73
599.001.011	T505/515 Lamp 28v 40mA Midget Used On T505/515	35
599.001.012	T525 Lamp 28v 60mA(MCC) Used On T525	35
599.001.020	Lamp 36v 30mA Bi-Pin Used On System 1600/T880 And Extingusihing Systems T520 & T530	35
599.047.001	LOOP A Label Loop A White	14
599.047.002	LOOP B Label Loop B Yellow	14
599.047.003	LOOP C Label Loop C Purple	14
599.047.004	LOOP D Label Loop D Green	14
599.047.005	LOOP E Label-Loop E Grey	14
599.047.006	LOOP F Label-Loop F Blue	14
599.047.007	LOOP G Label Loop G Orange	14
599.047.008	LOOP H Label Loop H Red	14
599.047.009	LOOP I Label Loop I Darkblue	14
599.047.010	LOOP J Label Loop J Black	14
599.047.011	ZONE 1-16 Label Zones 1-16	14
599.047.012	ZN 17-32 Label Zones 17-32	14
599.047.013	ZN 33-48 Label-Zones 33-48	14
599.047.014	ZN 49-64 Label-Zones 49-64	14
599.047.015	ZN 65-80 Label-Zones 65-80	14
599.048.001	P34R P34 P Clip Red For Use With Datywler Lifeline Cable. Suitable For Use 2 Core 1 & 1.5mm And 3 Core 1mm (Order In Multiples Of 50)	91
599.048.002	P34W P34 P Clip White For Use With Datywler Lifeline Cable. Suitable For Use 2 Core 1 & 1.5mm And 3 Core 1mm (Order In Multiples Of 50)	91
599.048.003	P37R P37 P Clip Red For Use With Datywler Lifeline Cable. Suitable For Use 2 Core 2.5mm , 3 Core 1.5mm & 4 Core 1mm (Order In Multiples Of 50)	91
599.048.005	P40R P40 P Clip Red For Use With Datywler Lifeline Cable. Suitable For Use 3 Core 2.5mm & 4 Core 1.5mm (Order In Multiples Of 50)	91
599.048.007	P43R P43 P Clip Red For Use With Datywler Lifeline Cable. Suitable For Use 7 Core 1.5mm & 4 Core 2.5mm (Order In Multiples Of 50)	91
599.048.009	NG1 Red Gland Kit For Lifeline (Order In Multiples Of 10)	91
599.048.010	NG1W White Gland Kit For Lifeline (Order In Multiples Of 10)	91
599.048.020	LIFELINE Cable 1mm 2 Core & Earth Red	91
599.048.022	LIFELINE Cable 1.5mm 2 Core & Earth Red	91
599.048.023	LIFELINE Cable 1.5mm 2 Core & Earth White	91
599.048.024	LIFELINE Cable 2.5mm 2 Core & Earth Red	91
599.048.032	LIFELINE Cable 1mm 4 Core & Earth Red	91
599.048.034	LIFELINE Cable 1.5mm 4 Core & Earth Red	91
599.048.035	LIFELINE Cable 1.5mm 4 Core & Earth White	91
636.006.060	Dell 17" FST monitor - part of kit for Thorn Graph or SGA PC	3
660.001.003	6v 1.2Ah Battery	39
660.001.004	12v 24Ah Battery	39
660.002.010	12v 4Ah Battery	39
660.002.012	12v 12Ah Battery	39
70-133	Flush Callpoint KR72-680 - Wormald	75
850509	TFX500 & 800M Field Wiring Guide	16
90-106	Test Keys For All CP200 / 500 / 800 / 900 Callpoints Except CP950EX	76
90-107	M141 Red M141 Spacer For Red CP2/8/900 KAC Callpoints	76
90-110	KR1 Flush Red Callpoint KAC Model KR1 Wormald Branded comes with NO and NC contact	75
910683	RPS-424 TFX Spare Dual Voltage Power Supply/Charger. Used On All TFX Panels.	17, 21
920450	Fireray2000 Optical Beam Smoke Detector Complete - UL Approved	69
940577	TFX / CONSYS Programming Cable With DB9 Female Connector. CONSYS Software Available On Document Control.	16
95-131	SR3T Callpoint Back Box	79
960673	TFX RMS-1T Single Action Non-Addressable Pull Station	22
960684	TFX Spare Glass Rod For Use With RMS Pullstations	22
960687	TFX Surface Mount Backbox For Use With RMS Pullstations	22
976015	TFX-MPIM Multi-Purpose Interface Module Used For Driving Additional LED Indicators, Status Control Modules, I/O Expansion And Printers	18
976016	TFX IAS-500 End-Of-Line (EOL) Assembly	19
976026	TFX CAA-500LI Line Isolator Module Complete With 2 Gang Mounting Plate	20
976040	TFX DCPM Dc/Dc Convertor For Use As A Spare Or With Additional MPIM Modules	17
976062	TFX LIB-800 Two Loop Addressable Expansion Module For Use As A Spare Or Expanding The TFX-800M To A Maximum Of 10 Loops	18
976063	TFX IAM-800 Additional / Spare Motherboard For TFX-800M	18
976066	TFX OAA-16 Digital Output Expansion Unit For Use With MPIM	18
976067	TFX IAA-16 Digital Input Expansion for use with MPIM	18
976077	TFX OMA-80 Mimic Driver PCB For Use With MPIM	18
976081	TFX IXA-501CM Addressable Mini Contact Module	20
976092	TFX IXA-500CMA Addressable Contact Module Complete With Us Double Gang Mounting Plate	20
976093	TFX IXA-500DMA Addressable Detector Zone Interface Module Complete With Double Gang Us Mounting Plate	20
976098	TFX XAA-16 8 Input & 8 Output Expansion Board For Use With MPIM	18
976122	TFX 500PSM Power Supply Monitor Module	17
976165	TFX TLI-530 Module Kit For Use On TFX-Net Only	19
976166	TLO-530 Board Kit For Use With TFX-Net	4, 19
976250	Spare TFX 27k 1w Resistors For Use With 505/6SDA	21
976254	TFX Spare Keys For Use On TFX OCM And Door	16
976258	TFX OXA-502RM Addressable Relay Module Complete With Us Double Gang Mounting Plate	21
976262	TFX SIM Serial Interface Module Provides Isolation To Serial Printers.	16
976277	TFX IXA-RMS Addressable Indoor Pullstation For Use On TFX Panels	22
976375	TFX MDM521 Addressable Multi-Way Conventional Detection Zone Interface For 1-8 Zones	21
976378	TFX 506SDA Addressable Sounder/Notification Device Output Module Complete With Us Double Gang Mounting Plate. Used For Switching Sounder And Speaker Circuits	21
976402	TFX OCP Remote Operator Control Panel With Fire Control Module (FCM) And Operator Display Module (ODM)	16
976403	TFX OCP Remote Operator Contrl Panel With Fire Control Module And 16 Indicator LED Module (FCM/16ind)	16
976404	TFX Semi Flush Backbox For Use With All Remote Operator Control Panels	16
976416	TFX Surface Mount Backbox For Use With Any Remote Operator Control Panel	16
976422	TFX400 Two Loop Ul /FM Approved Fire Control Panel Supplied In Red With Grinnell Branding.	15
9976130	TFX 40x2 Indicator With MPIM Board. Provides An Additional 40x2 Zone Indicators For Use With TFX-500M Or TFX-800M	16
9976132	TFX 40 Way Status Control Module And MPIM Module For Adding To TFX-500M Or TFX-800M	16
9976134	16 Way Status Control Module With MPIM. For Use With TFX-500M Or TFX-800M	16
9976136	TFX 80IND/1 80 Indicator Module With One Integral MPIM Card For Use On TFX-800M	16
9976137	TFX IND80/2 80 Way Indicator Module With 2 MPIM Modules Built In.	16
AM2801/000	M600/800/900 Series Range Identifier Card (Must be ordered in multiples of 100)	47
ASKW	Askari Sounder - White	81
ROSHRDSR	Roshni Sounder Deep Base - Red	81

Notes

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